

# ACCS

See Page 15



"THE TIMES" OF THE TRANSPORT WORLD

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VOL. LXXXIII No. 2154

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LONDON, AUGUST 27, 1960

PRICE ONE SHILLING

## Sheffield Tramway Abandonment

THE last day for tramway operation in Sheffield will be Saturday, October 8 next, and arrangements are now well in hand for the ceremony which will mark the occasion. A final procession of some 15 cars will provide accommodation for approximately 500 members of the public in addition to official guests and the civic party. The procession will leave Tenter Street depot at 6 p.m. and after travelling over the two remaining tram routes will terminate at Tinsley depot around 7.30 p.m. During the last week of operation, an illuminated car, which has been converted from a single-deck to an open-top double-deck for the occasion, will be operating in the city. During the last ride certain members of the transport staff, dressed in period costume, will travel on this car. In addition two of Sheffield's postwar cars are now in the hands of the sign-writers, who are decorating the exteriors with pictures of various types of tramcar which have operated in Sheffield since 1873. These two cars will be operating in service during Sheffield's last tram week. Three of the cars included in the final procession on October 8 have been handed over to the Tramway Museum Society, and instead of proceeding to Tinsley depot will run into the department's Queen's Road works, where they will be prepared for removal to the Society's premises at Crich in Derbyshire. Applications for seats on the last tram ride are now being received (closing date September 15). Tickets for the last tram ride will cost 7s. 6d. each and will include a free copy of an illustrated souvenir brochure. Applications should not be accompanied by money. Seats will be allocated later. *The Tramway Era in Sheffield* will be on sale price 6s. post free, and orders for these are now being accepted. This publication will cover tramway operation in Sheffield from the first days of company operation in 1873. An exhibition covering the tramway period will be open to the public in the Sheffield City Library for a period of three weeks from Tuesday, October 11, 1960.

## Stock Exchange Mechanisation

SINGULARLY interesting problems have been encountered in the mechanisation of the settlement department of the London Stock Exchange, which began operation in a modest way on August 23. It is hoped that by November all stocks now cleared by the department will be cleared by machinery; in the first instance 24 of the 160 will be tackled and later it is hoped to increase the number. The number of bargains cleared in an account has recently been about 60,000; the I.C.T. machines now installed will enable some 150,000 to be handled. It has sometimes been alleged that this great City institution has been slow to mechanise; if it has been slower than member firms or than foreign bourses it must be attributed in part to the problems associated with Government duty on transactions which does not go ad valorem. A considerable saving in labour will result from the installation; at present about 150 whole or part-time operators do this job by hand; many of the part-time men are, it appears, associated with transport in the railway and port industries. The overtime of the part-time staff will now be reduced. The matching of bargains at the end of an account will still be carried out by hand. There will be one I.C.T. resident-engineer; it will not be necessary to retain more outside technical experts since mark sensing machines will be used. The capital value of the 18 machines is £90,000; they are rented at £1,500 a month.

## Fewer Cargo-Passenger Ships

A RECENT statement by Mr. Robert Stoker, a director of Manchester Liners, Limited, to the effect that his company would not include passenger accommodation in its new ships, emphasises the decline in ships of the cargo-passenger type; in other words ships that carry about 10,000 tons of cargo and 12 or so passengers. As a matter of fact Manchester Liners has for many years carried passengers between Manchester, Canada and North America, in fair and open competition with the passenger liner com-

panies, and in doing so has achieved a reputation which the latter might well envy. At one time it was considered quite the "thing" to voyage in ships of this type, and their friendly atmosphere and the lack of that formality usually associated with great liners endeared them to large numbers of travellers and generally made for happy sailing. However, it is now very evident that a high percentage of the tonnage being ordered by shipping companies which have in the past made provision for a few passengers, is concentrated towards providing super cargo

blocks, so phased that each could flow through the intersection without hindrance. (There is no comment on how right-turning traffic would be dealt with and presumably it would be banned.) It is further suggested that the system could be applied throughout the length of a main traffic route from outskirts to centre of large urban areas, entirely eliminating halting at traffic signals. Apart from the saving in fuel consumption and wear and tear by elimination of stopping and waiting, benefit is seen in a traffic capacity of existing streets increased by "several

# CURRENT TOPICS

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ships only, and the business of passenger carrying is being left to purely passenger ship operators and the airlines. Obviously the high cost of shipbuilding these days has a bearing on the matter, and the provision of cabins and other facilities for passengers can prove uneconomical. There is also the extra crew needed to cater for their needs, and the fact that accommodation for the modern ship's personnel now takes up a great deal more space than hitherto. For example most ships' officers are now provided with their own private bathrooms and toilets, while the crew are accommodated in single berth cabins. Add this to the higher costs involved in wages and catering, and it becomes quickly obvious that in most cases the fares earned from carrying a few passengers do not make a very welcome or sufficient contribution towards overall operating costs. There is no doubt, nevertheless, that these intermediate boats, as they are often described, will remain quite popular. And indeed they still offer the only means of sea transport to quite a number of seaports throughout the world. It is evident also that cargo-passenger ships are feeling the draught caused by the increasing swing from sea to air travel, and a decline in their numbers is in line with the trend started by several passenger liner companies which have made no provision for cargo in their ships. The tendency today is one ship, one job.

## Loop-Formation Traffic Flow

PHASED traffic signals installed in Oxford Street, London, Slough High Street and on A4 west of that town have not proved so successful as to substantiate all the claims of better potential traffic flow put forward by Mr. William Turner, of Bradford, for his suggestions for "loop-formation" traffic flow through busy intersections, which is in effect an extension of the phased lights idea. Mr. Turner's philosophy visualises the formation of traffic into blocks on the uncongested approaches to points where there normally exist converging or conflicting streams, drivers regulating their approach speed in accordance with the advice of miniature traffic lights. With careful observance of the advanced signals it is suggested that traffic would be formed into blocks, with spaces between

times"—a phrase interpreted by the originator of the plan as meaning that "two or three times more vehicles might be enabled to travel two or three times more quickly along a given route." Rather naively, we feel, Mr. Turner thinks that because compliance with the advice of the approach lights would be beneficial, there would be a "high degree" of their observance by drivers. Perhaps. When we first see a choked light-controlled crossing where nine out of ten drivers do not go forward on the green regardless of the fact that by so doing they completely block the cross-flow we might agree with him. Nevertheless, possibilities of the Turner method have rightly engaged the attention of the Road Research Laboratory and some practical experimentation—Mr. Turner suggests where Sheffield—Selby traffic interweaves with Great North Road traffic at Doncaster would make a useful start—might well prove that the majority of drivers of motor vehicles have less of the lemming in their makeup than is apparently the case.

## East German Transport

BY 1965 is anticipated that more than half of all goods traffic in East Germany will be carried by motor transport. With a rise of 56 per cent over the figures for 1958, motor traffic is the most rapidly developing form of transport during the current seven-year plan. On the passenger side 5,400 new motor buses and coaches are to be taken into service, mainly on the routes serving rural districts, by 1965. The most important highway project is the Berlin—Rostock autobahn and the completion of the Berlin Ring. This project entails the building of 406 bridges and the moving of 38 million cu. m. of earth. The railways are to adapt the Berlin—Rostock line for speeds of up to 160 km. an hour at a later date. New rolling stock includes 1,000 diesel locomotives, 100 electric locomotives and 16,000 goods wagons. In 1965 the East German merchant fleet is expected to carry about 4.8 million tons—some 4 million tons more than in 1958—in East German ships. During the course of the seven-year plan 20 multi-purpose freighters are to be commissioned. Jet aircraft will be introduced next year. To accommodate them Berlin-Schönefeld is being developed.

## New York Commuter Scheme

DESPITE the obvious liking of the public for private car and bus transport, Colonel S. H. Bingham, the American transport consultant, still considers that railway service has merits which could win it traffic and enable successful operation. To solve the urgent traffic problems of the New York area he therefore proposed last week a new network of commuter railways based on existing rights-of-way with a comparatively short pair of tunnel connections to be set up by the States of New York, New Jersey and Connecticut. It would begin south-west of the conurbation at Bound Brook in New Jersey and running through Newark and by the Hudson and Manhattan Railroad tunnels (now taking only 30 per cent of their one-time traffic) to New York itself. The main stem would run the length of Manhattan and fork to Yonkers and along the Hudson River to Ossining (an optional route), run mainly north to White Plains and Pleasantville and north-east along Long Island Sound to Port Chester, Stamford and Fairfield in Connecticut. A Long Island branch would run to Port Washington. Whereas completely new lines would cost \$915 million, use of existing routes could keep cost of an extremely useful high-speed transit system to \$317 million, or \$210 million without the Port Washington line. Special centralised control for signalling is proposed, together with new ideas in 80 m.p.h. rolling stock on a 600-volt third-rail system.

## Triumphant Year for B.E.A.

IT had already been indicated by the chairman of British European Airways, Lord Douglas of Kirtleside, in one of his monthly messages to the staff, that the corporation had made a profit of more than £2 million in 1959-60, but prior knowledge in no way detracts from what can undoubtedly be considered a triumphant year for an operator with so many short haul routes. As will be seen from the summary of the report which appears on page 5 the actual profit of £2,086,078 was reached after payment of interest on B.E.A. stocks and Ministry of Aviation advances. Since these required £1,816,555, against £1,525,003 in the previous year it will be seen that the profit on the operating account was even more substantial and, indeed, amounted to £3,165,851, which was better by £1,707,362 than the figure for the previous year. The preparations for the entry into service of the de Havilland Comet 4Bs naturally caused a marked increase in training costs and since the type flew only 16 revenue hours during the year there was a deficiency of £861,000 in respect of it. In fairness, however, it should be added that it achieved a load factor of 78.6 per cent on the eight flights it made. The year was the first complete one of B.E.A. operation from Gatwick and there is a significant remark that 75 per cent of the 185,900 passengers handled used the railway facilities to or from London.

## Good Use of Resources

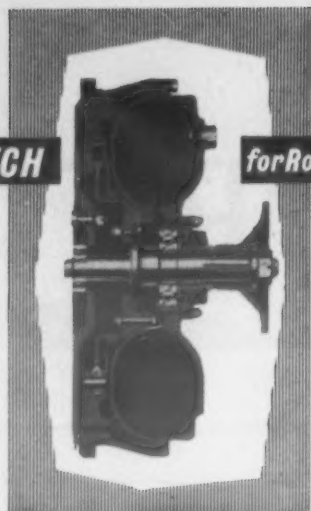
THE availability of more than £2 million gave B.E.A. the opportunity to complete the writing off of the intangible assets representing the premium paid on the acquisition in 1947 of the shares in the companies operating the internal services and the Channel Islands routes; a very useful move has been the establishment of a development reserve of £1 million which can act as a financial cushion for some of the inevitable expenditure associated with the introduction of new types of aircraft. The guiding principle, however, in the face of such profit-making ability, has been to employ it to the benefit of the travelling public by reducing fares. The substantial cuts this year will almost certainly mean that the corporation will show a smaller profit for 1960-61, but there can be no gainsaying the correctness of its views as to the duties of a public service. There must also be a hope that any doubts which it may have as to possible sufferings at the hands of the new Air Transport Licensing Board will not, in fact, be justified. The stultification of its plans in any way could be little or nothing short of tragic.



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Published Every Friday

RUSSELL COURT, 3-16 WOBURN PLACE,  
LONDON, W.C.1

Telephone Number: TERebus 0263 (3 lines)  
Telegraphic Address: Transpaco, Westcent, London

ANNUAL SUBSCRIPTIONS

BRITISH ISLES, 47/6; CANADA, 45/-;

ELSEWHERE ABROAD, 47/6

payable in advance and postage free

*The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.*

We desire to call the attention of our readers to the fact that Russell Court, 3-16 Woburn Place, London, W.C.1, is our sole London address, and that no connection exists between this newspaper and any other publications bearing somewhat similar titles.

**Transport and the T.U.C.  
Report**

A YEAR ago the T.U.C. General Council undertook to investigate the subject of unofficial strikes and the behaviour of shop stewards. The interim report, prepared by the trade union side of the Minister of Labour's National Joint Advisory Council, is a carefully reasoned but disappointing document. It contains a warning to trade unions to be more vigilant and if necessary withdraw the credentials of any shop steward who acts contrary to union rules or agreements but places most of the blame on the employers. "The responsibility of employers for strikes is largely ignored or played down," it states. "No trade union officer is free from mistakes and in some cases one reason for a dispute developing into a strike may be the representative's personality or his misjudgement of the situation. However, the fault is more likely to be due to poor management (hasty decisions, causing rumour through withholding information, etc.) and to management being more concerned with 'face' and 'prerogatives' than with proper leadership. A negative management policy breeds the view that 'the only way to get anything done in this firm is to stop the job.'" Employers' organisations are blamed for not enquiring into "malpractices" and for not criticising their own delinquents. The report rightly asserts that there can be strong unions, but there cannot be good industrial relations without good employers, but it goes so far as to accuse some employers of "the unprincipled use of procedure to gain time" at the end of which the latter acknowledge that strike action "can now properly be taken."

**Unions and Strikes**

PROCEDURE agreements are criticised as often narrow in scope and one-sided in operation. Many agreements do not provide for discussion on redundancy and a strike may be the only way to obtain a widening of recognition when employers refuse to discuss their plans about dismissals; recognition for wages is not enough, it is stated. Having said all this it is not surprising that the report lacks any general denunciation of unofficial strikes. It remarks that "although the union's rules may not provide for this type of strike, it does not mean that when the facts are known the union will necessarily

oppose it." In about half the cases where strikes began without official sanction the unions paid dispute benefit. When the facts are known the union will not necessarily oppose such a strike, even though presumably agreements have been broken. The other half, it is stated, were less spontaneous and included instances where strike action was taken or prolonged against general policy and specific advice. These are the circumstances in which disciplinary action is recommended. There is stated to be reluctance by many unions to expel recalcitrant members for fear that they will be recruited by rival unions. On this point the report suggests, optimistically perhaps, in view of recent experience with the seamen and dockers, that "where one union decided on expulsion from membership for ringleading a needless strike, it is unlikely that another union would give this ex-member further opportunities to do harm." It admits, however, that it may become necessary to revise the Bridlington agreement which governs relations between unions to cover such contingencies.

**Shop Stewards**

THE report estimates that there are more than 200,000 shop stewards or other union representatives in places of work, and most of them are responsible men doing a job selflessly. Only a few are said to misuse their power, and employers are again held responsible for some of their transgressions. Dealing with disruptive bodies the report states that local activities in the name of closer unity do not necessarily help the achievement of that fraternity that should be inherent in trades unionism; national organisations of shop stewards are often a challenge to established union arrangements—a mild criticism indeed—and there can properly be resentment about talk of a "shop stewards' movement." Stewards, like branch secretaries, are union officers, the report points out. "Like every other representative of a union the steward is subject to its rules and bound by its obligations. He is not partly within his union and partly independent of it. Except for those who want to split the trade union movement there should be no talk of a separate movement of stewards." It goes on to state that it is impracticable for a number of reasons, which unfortunately are not given, to recommend direct communication between the secretary of a joint committee of unions nationally and the officers of joint stewards' committees within the industry concerned.

**Transport Closely Concerned**

THE report gives one the impression of a tendency to gloss over some of the discreditable aspects of the subject with which it deals. The General Council, indeed, "did not attach a disproportionate importance to the inquiry." Some of the union leaders did not want it and refused to participate, and there seems to be an attempt to err on the side of clemency towards the militants, and no names are mentioned. It was begun in a period of public exasperation at wildcat strikes in which, as the general secretary of the T.U.C. remarked at the time, "hundreds of thousands of innocent trade unionists" were suffering. Unjustified breaches of agreements, said Sir Tom Williamson, could in no circumstances be condoned and, in a reference to the impending inquiry, this time they really meant business. This was shortly after the strike at London Airport, repeated down tools in factories with far-reaching effects in the motor industry, and demarcation disputes in shipbuilding and other sections—incidents which brought discredit on British industry in general and the trade union movement in particular. The report comes on top of a series of unofficial strikes among seamen and dockers in dispute on the terms agreed by their union leaders which, as in all cases of the kind, have caused serious public inconvenience and heaped up further losses on Britain's sorely tried shipping. Of all industries, therefore, those embraced by transport have been most affected, and the providers of transport were hopeful that some really useful conclusions would emerge from the labours of the investigators. We are afraid they will be disappointed.

**NEWS SUMMARY**

A SERIES of articles on the present state of railway electrification, appropriate to the forthcoming British Railways electrification convention and exhibition at Battersea, to be held October 3-7, begins on page 11 of this issue.

We record with regret the death of Lord Weeks, a former chairman of Vickers, Limited. The Road Haulage Association has appointed Mr. G. K. Newman as chief executive officer as from August 24, in succession to the late Mr. R. Morton Mitchell. A portrait and biography appear on page 15.

Among new Dennis models announced is a front-wheel drive low-level unit, the Vendor, for traders' vehicles, a Mark IV of the well-known Pax forward-control chassis for 10 tons 8 cwt. all-up and a Mark III version of the Loline bus chassis. See page 13. The Dennis aircraft loader (MODERN TRANSPORT, August 6) will be on view at Farnborough.

London busmen have begun fresh negotiations on wages with the London Transport Executive with a view to overcoming serious staff shortage.

A new A.E.C. model to be introduced at the Commercial Vehicle Exhibition at Earls Court (September 23-October 1) is the Regal VI, an entirely new single-deck bus or coach model completing the heavy vehicle range; also new this year is the Marshal six-wheeled chassis for 20 tons gross.

At a meeting of the Railway Shopmen's National Council on August 23 the employees' side indicated that the British Transport Commission's offer was not acceptable in its present form.

Most municipal transport undertakings in their last financial year have reaped the benefit of a relatively stable period in the department of operating costs, but Derby Corporation Omnibus Department (operating buses and trolleybuses in like numbers) broke all records in its 60-year history with a net surplus of £57,877, and this without any increase in fares.



# CENTENARY OF THE TRAMCAR

## Birkenhead Occasion

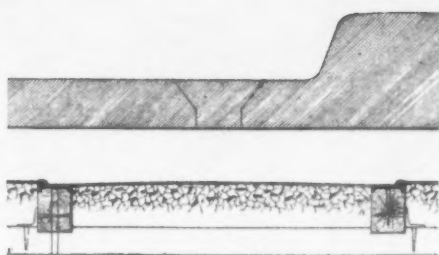
### VIEWS ON TRAMWAYS

THURSDAY, August 30, 1860, saw the opening in Birkenhead of what may be regarded as the first street tramway in Britain. This has been marked this week by a centenary exhibition of models and relics at the Bishopsgate Institute, London, organised by the Tramway and Light Railway Society. The driving force behind the venture of 100 years ago was a flamboyant American, George Francis Train, who obtained permission from the local authority to lay down rails and maintain the track at his own expense, and agreed to remove it after six months' trial and make good the roads again if the venture was not favourably received, in return being granted the sole right to run cars on such rails. In fact the scheme was operated by a limited company, the Birkenhead Street Railway Co., Limited. Next to Train the principal shareholder was James McHenry, who later held a majority of the £10,000 capital.

Following the sealing of the contract with the Birkenhead Commissioners on May 22, 1860, work commenced on the building of the four cars and the rolling of the rails for one section of the agreed works, ground being first broken for the laying of these rails only 60 days prior to the opening of the tramway.

The first section of line opened ran from Woodside Ferry, the transfer point for the cross-Mersey passenger and goods ferries, to Birkenhead Park, a residential area some 1½ miles distant from the river. The other route authorised embraced the residential areas of Cloughton and Oxtown and was inaugurated in 1861.

On the opening day Train invited to a huge banquet not only civic dignitaries and eminent engineers, but all the crowned heads of Europe, as well as the Pope and Garibaldi. None of these eminent persons attended, but over 300 guests, including local government officers, civil engineers and members of H.M. Forces accepted and, accord-



Train's step rail in section and, below, cross-section of Birkenhead track in water-bound macadam road

had insufficient funds to maintain its rails and the roadways and again the Birkenhead Corporation purchased the lines, the Wirral Company continuing to work the tramway under lease at an agreed rental. The Corporation thus became the owners, but not the operators, of some 10 route-miles of tramway lines in the borough.

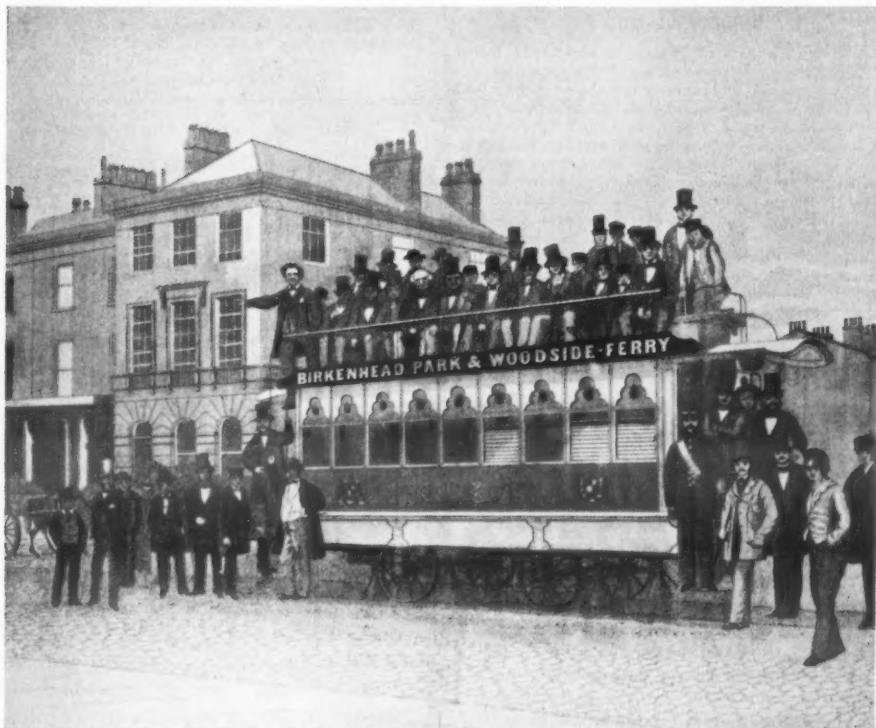
#### Ferries

Until the Mersey Railway was opened in 1886 the only mode of communication with Liverpool was by ferry. In 1330 Edward III granted the rights of ferry across the River Mersey to the Benedictine Order of Monks of Birkenhead Priory and its successors for all time. Following the suppression of the monasteries by Henry VIII the ferry frequently changed hands, and in 1841 the boats, quays and the old grant made to the monks were bought by the township.

The Corporation, which dates from 1877, must have been well pleased with the tramways feeding its ferry, including also the Woodside Station terminal of the Chester and Birkenhead Railway erected adjacent to the landing stage and completed April 1, 1878, which projects had all been established without municipal expenditure. Indeed the ferry traffic became so intensive that a floating landing stage was constructed at Woodside in 1861, replacing an ancient stone slipway and enabling vehicles and passengers to be embarked and disembarked in minimum time at all states of the tide.

#### Electric Tramways

At the turn of the century the corporation decided to operate the tramways itself and electrify them; it therefore began negotiations to determine the leases to the companies. In 1901 the population of Birkenhead had increased to 110,915 and in



Engraving from a photograph of one of Train's 48-seat double-deckers (24 inside and 24 on upper-deck knifeboard) outside what is now the Woodside Hotel at Birkenhead. Note brushes to clean track. There were also two single-deck cars built by Main in the 1860 equipment

ing to the press reports of the day, were entertained not only to food, music and song, with 11 toasts, but with some of the most extraordinary orations ever uttered, described in one account as "the most extravagant, bombastic, egotistic, windy utterances that mortal man ever made."

#### Insecurity

Without Parliamentary powers, the tenure of the company was insecure and it was only saved in 1862 or so when McHenry sprang the cash to re-lay it in grooved rail. The Birkenhead Commissioners harried it in 1864 and it was indicted for obstruction in the following year by bus drivers and coachmen. Popular feeling supported the tramway, however, and it survived until in 1877 an Act was obtained to dissolve the company and form a statutory one, the Birkenhead Tramways Company. There was also authorised another track from Haymarket, along Borough Road on the way to Prenton as far as North Road, the then eastern perimeter of the town's built-up area. This opened on July 11, 1878.

In 1872 the Hoylake and Birkenhead Tramways Company was granted powers to lay a tramway from Woodside along the line of docks to Docks Station, where it connected with the railway already operating across the Wirral Peninsula. Docks later became Birkenhead North and the railway was extended under Wirral auspices in 1888 to Birkenhead Park to meet the Mersey Railway's route from Liverpool. In the meantime the parallel horse tramway had opened in 1873. In 1874 the Wirral Tramways Company was granted powers to lay a tramway from Woodside to New Ferry and this was in service by the following year. The company belonged to a group which also owned tramways in Liverpool and Wallasey.

#### Consolidation

In 1879 the Birkenhead Tramways purchased the Docks route, but by 1889 this company was in financial difficulties and the Corporation of Birkenhead purchased the lines and granted a lease to a new company, the Birkenhead United Tramways Omnibus and Carriage Co., Limited, to use the rails. In 1895 the Wirral Tramways Company

February of that year the first electric tramcar ran on the New Ferry route, this event marking the start of local municipal service. Six electric tram routes were opened in that year, all from Woodside; to New Ferry begun on February 4, Higher Tranmere on August 14, Cloughton Road on August 14, Park Road North on August 14, Prenton on September 27, Shrewsbury Road on September 27 and Line of Docks on December 24. On March 2, 1902, the Shrewsbury Road and Park Road North spurs were joined to form a circular route.

The introduction of electric tramcars proved from the onset a financial success. By the end of the year 1902, 14 route-miles and 24 track-miles were open with a fleet of 60 trams; in that year 6,456,361 passengers were carried and 718,726 miles run, the receipts being £31,594 and the working expenses £19,811.

#### Buses

No further material extensions of the tramway system were made and the Council, appreciating the traffic potentialities, offered not only by industrial development, but also by improved transport facilities with the many areas in the Wirral Peninsula not adequately catered for, decided in 1913 that the displacement of the trams by motor buses was inevitable. An Act was passed in July, 1914, giving the Corporation such powers, but due to the war the first bus service was not started until July, 1919. The changeover was indeed gradual and it was not until July 16, 1937, that the last electric tramcar ran over the circular route. So ended 77 years of street tramway operation in Birkenhead.

Whilst the passing of the tramcar caused little regret, the closing of the Corporation ferries between New Ferry and Rock Ferry and Liverpool in 1922 and 1939 respectively was deprecated by many. These services had for many years been running at a loss; they were competitive with the Corporation's alternative route by bus or tram to Woodside and thence by the more frequent and shorter cross river service to Liverpool, which ferry still operates.

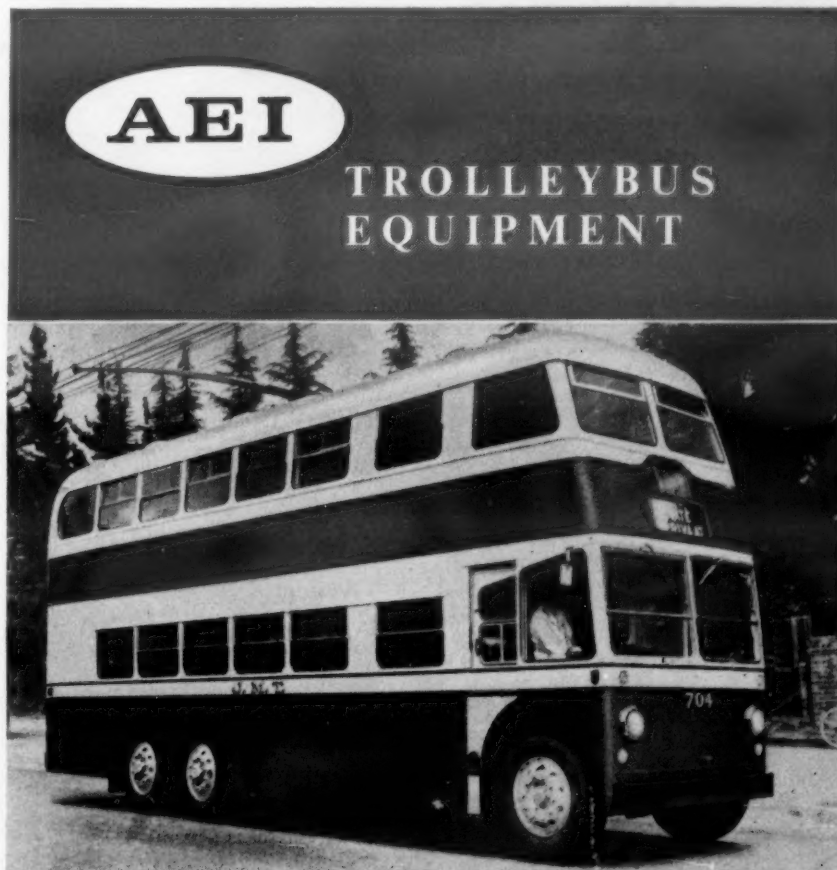
(Continued on page 12)

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AEI has supplied trolleybus and tramcar equipment for many parts of the world. The above illustrates one of the more recent orders for 20 equipments for vehicles each with a laden weight of between 18 and 19 tons.

All enquiries should be addressed to the local AEI office or direct to:—

**AEI** Associated Electrical Industries Limited  
Traction Division · Trafford Park, Manchester 17  
Manchester · Rugby and London



LORRY—BUS—COACH

## A Monstrous State of Affairs

WHEN a Stockton-on-Tees haulage firm applied to the Northern Area Licensing Authority at Stockton for a variation of its licences, Mr. J. A. T. Hanlon, chairman of the authority, referred to firms in the Midlands which ordered goods at 5 p.m. one day and expected delivery the following morning. This, he said, meant that lorries had to make night journeys to make deliveries the following morning. He described the practice as monstrous, and added that with a little forethought on the part of the customers the goods could be sent more easily by railway. J. Williamson (Haulage Contractors), Limited, Stockton, received permission to operate a 7½-ton flat-bedded lorry for transporting steel, iron, chemicals and foodstuffs. A 4½-ton articulated vehicle was limited to a radius of 30 miles of Stockton. Mr. A. Moore, manager of a Middlesbrough foundry, said that Williamson had carried its products for many years. There was heavy competition in the foundry trade, so much so that if a customer in London or the Midlands overlooked placing an order and rang up the foundry after 5 p.m., the goods would have to be delivered the following morning, or the foundry might lose the contract. Mr. Moore said that the practice of customers placing orders in the late afternoon for delivery the following morning was becoming too prevalent. Mr. Hanlon said that until the law was changed they could do very little about it. He made no criticism of the applicant. It was a case of cut-throat competition, and if it did not do the work, someone else would.

### Liverpool Bus Map

MUCH to be commended is a new folder bus map, price 1s., just published by Liverpool Transport. It is in colour, on a large scale (38 in. by 24 in.), and has insets to cope with the somewhat complicated pattern of operations in the city centre, with its special peak-hour loading points. Special (unnumbered) routes are shown, as are railway lines and stations.

### Bandwagon for Parties

FOR five months H. Thomas (Motors), Limited, Chorlton Green, Manchester, has been supplying a special bus service to carry Irish nurses at hospitals in the Manchester area to a club in Bolton. Last week the North Western Area Traffic Commissioners refused the company's application for a licence to carry Irish people—mainly nurses—to the Irish Social Club in Bolton on Sunday evenings and on St. Patrick's night, and authorised instead Lancashire United Transport, Limited, to run a similar service. L.U.T., together with Manchester Corporation Transport Department and the town clerks of Bolton and Salford, were objectors to the application. For H. Thomas (Motors), Mr. J. Backhouse said the popularity of Irish get-togethers seemed to have grown. Dances were held at the Bolton club every Sunday evening, finishing at 11.30 p.m. The main difficulty was that the last public service bus left Bolton for Manchester at 10.55 p.m. Mr. T. Lloyd, traffic manager of L.U.T., said his company already

operated a regular daily service to Bolton to a point 400 yd. away from the club. It was willing and ready to provide a service equal to that proposed by Thomas Motors. Mr. Backhouse suggested this was one of those cases where the objectors and the L.U.T. were seeking to jump on the bandwagon.

### Future of Derby Trolleybus System

A SUGGESTION that Derby Corporation should abolish its trolleybus system is made in a report issued recently. The report, entitled "What will be the effect of the proposed extensions of the M1 on Derby and South Derbyshire," has been prepared by the Transport Committee and Derby



Road-rail collaboration. Provision by the Scottish Region of British Railways for bulk conveyance of cement for a new nuclear energy station included two 90-ton silos from which Scammell articulated bulk cement carriers are seen loading

and Derbyshire Junior Chamber of Commerce. It urges that Derby Corporation completes the inner ring road within the next five years and abolishes its trolleybus system as being the biggest bugbear to traffic reorganisation in the town. If this is not done the committee predicts that "utter chaos" will reign in that time.

### A.R.T.C.O. Reorganisation

THE directors of Associated Road Transport Contractors, Limited, have appointed Mr. Ralph Cropper, transport consultant, as secretary, feeling that there was considerable advantage in having an independent secretary, rather than one associated with a member firm, as had been the case in the past. Burrows Transport, Limited, was cordially thanked for the help which it had given for many years in the secretarial arrange-

ments. In consequence of the change of secretarial arrangements, the administration address of A.R.T.C.O. has now been changed to 49A Eagle Street, Holborn, London, W.C.1. The directors gave further consideration to the question of bulk buying for members and reviewed the exploratory discussions that had taken place on this matter. The possibility of compiling a depot to depot rates schedule was also discussed. This schedule, when eventually adopted, will apply solely as a private arrangement between members to provide them with a quick and ready method of ascertaining the cost of using each other's services. Mr. Alan Cusick was asked to work out a schedule of figures for consideration at the next meeting of the directors. Arrangements were made for the annual general meeting of A.R.T.C.O. to be held on December 5.

### Lahore Corporation Transport?

FOLLOWING upon the news that West Pakistan is to denationalise road transport, Mr. C. M. Hussain, vice-chairman of the Lahore Municipal Committee, has suggested the formation of a transport corporation for the city. He suggested that 51 per cent shares of the proposed corporation should belong to the municipality and the rest to the public. The corporation would absorb employees of the present Lahore Omnibus Service. Mr. Hussain said that the Provincial Government owed a sum of Rs.30 million to the Municipal Committee as arrears and outstanding dues and neatly suggested that this sum could be invested in the proposed corporation on behalf of the committee. The Government has said it will not take any hasty steps in denationalisation. It will continue to operate in major cities and zones until such time as suitable private corporations enter the field to replace the existing system. The denationalisation of road transport would obviously involve the winding up of the West Pakistan Road Transport Board at some stage. The issue will be examined carefully by a body of experts who will endeavour not only to ensure adequate facilities for the travelling public but have also been instructed to safeguard the rights and interests of all employees of the board.

### When Fish Can Fly

ROAD transport in Britain is benefiting from a decision of an Icelandic fishing company to send all its fish to England by air in future. The fish has previously been taken to Grimsby by boat, a five-day journey, but now aircraft of Icelandair will carry at least 20 tons each week to Manchester in 5 hr. From Manchester it will be taken to Grimsby by road for processing and distribution. The company, Gislí Jonsson and Co., Limited, flew its first consignment into Manchester on August 19. Although it was six hours late a spokesman for the company said the delay would cause no trouble. On an experimental flight 10 days earlier the fish got to Grimsby so quickly that the processors

complained that it was too fresh. They had to leave it for some time before they could start filleting.

### Municipal Results

Wigan.—Gross surplus in 1959-60 was £70,556 (£75,666) and net deficit after tax £3,303 (£1,695). Accumulated deficit is £12,538, but proper provision is being made to cover capital expenditure on bus renewals.

Newcastle upon Tyne.—The net surplus was £153,648 and this has been transferred to the general reserve, which now stands at nearly £500,000.

Southampton.—Net surplus £45,590, although 40 per cent of passengers travelled at the minimum fare of 2d. When fleet replacement commences next year additional revenue will be needed as normal depreciation charges are not being covered by revenue. Mileage was up fractionally.

Derby.—Enjoyed a 60-year record net surplus of £57,877 (£20,836), to which trolleybuses contributed £50,889 and buses £7,038. The gross operating surplus was £20,831. About 250,000 additional passengers were carried. There was no increase in fares.

### London Busmen's Conditions

REPRESENTATIVES of the London Transport Executive at a meeting this week with the busmen's negotiating committee of the Transport and General Workers Union agreed to consider proposals for more pay and better weekend working conditions. The suggestions, it is understood, were aimed at encouraging recruitment in view of the staff shortage, estimated at between 5,000 and 6,000 drivers and conductors. The meeting was adjourned until September 5. Both sides agreed that the manpower shortage was serious. The union, however, was not prepared to reconsider the proposed bonus scheme recently rejected by a delegate conference nor did it accept an offer to set up a joint working party to consider the possibility of easing weekend duties.

### "A Service Run for Private People"

LEICESTER magistrates fined a Leicester mini-bus proprietor and the organiser of Sunday evening journeys for permitting the use of an 11-seat bus as an express carriage without a road service licence. The proprietor, Horace Clifford Davies, of 6 Kintyre Drive, Leicester, and Robert Marsh, of 201 Belper Street, Leicester, were each fined £5 with £3 13s. 6d. costs. Both pleaded not guilty. Mr. John Bray, prosecuting, said 15 journeys were made to Kirby Bellars on Sunday evenings between November last and March. Marsh was the organiser and collected 30s. from the passengers which he gave to Davies. The average was 3s. per passenger for the journey out and back. The journeys were regular and separate fares were charged. Mr. J. Barlow, defending, said the coach did not go to Kirby Bellars every week—it had also gone to Quorn, Barrow-upon-Soar, Whetstone, Gilmorton and Glenfield. This was a purely private party of friends who wanted to go out on a Sunday and arranged for Mr. Davies to take them out. There was no advertising. The journey had not been regular enough for the men to be guilty. The passengers got to the starting place and then decided where they were going. It was just a service run for private people.

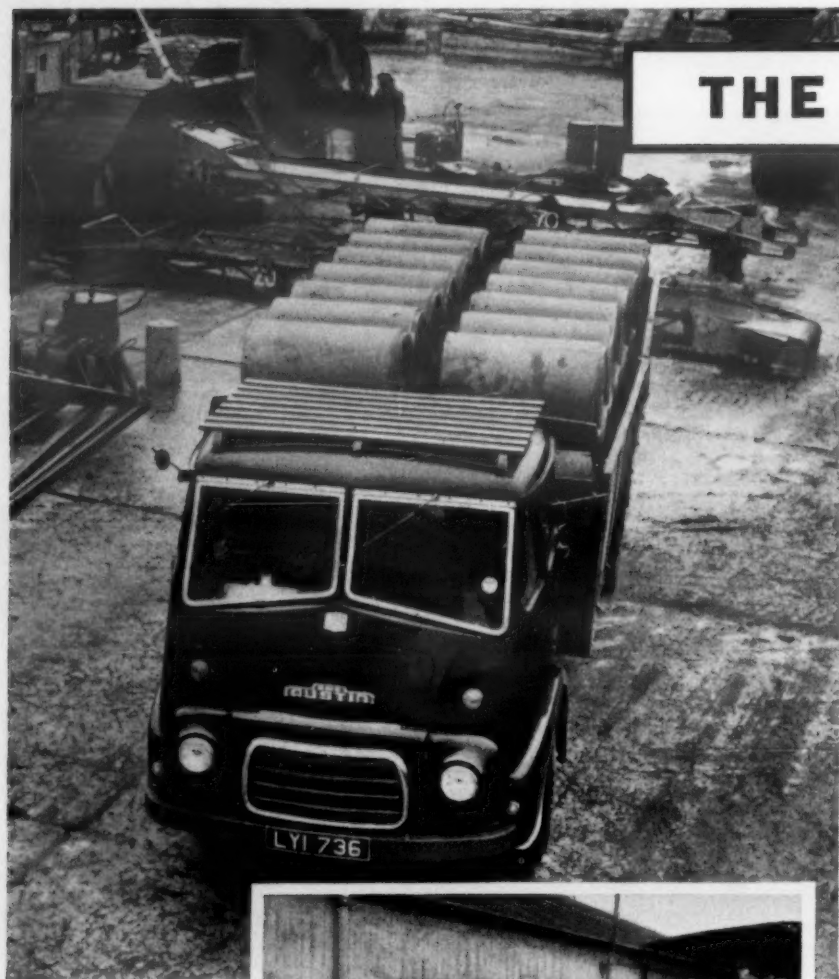
### Bus and Coach Developments

London Transport proposes to abandon Sunday operation of its country bus route 316 (Chesham—Hemel Hempstead).

G. D. Bengry (Primrose Motor Services), Leominster, applies for licences of R. R. Worthing.

W. and C. A. Griffiths, Leintwardine, now applies for the Ludlow—Leintwardine—Knighton service of the Corvedale Motor Co., Limited (MODERN TRANSPORT, August 6).

Blackpool Corporation proposes a daily service between Blackpool North Station and Inghorpe Estate (Collins Avenue) via Talbot Road, Westcliffe Drive, Bispham Road, All Hallows Road, Inghorpe Avenue and Ashfield Road.



Giant machines wait maintenance at Boora, Co. Offaly. Many have been towed there by Austins. Behind them stretch 25,000 black bog acres. A 7 ton Austin takes on 60 pipes, each weighing 2½ cwt., for delivery to drainage sites.

At Kilberry (Co. Kildare) peat moss factory, a 5 ton Austin loads with burlap bales for export. Bord na Mona's peat moss is used for agriculture and poultry all over the world, and noted for consistent quality. 90% of British mushrooms grow on this Irish moss.



## THE IRISH BEAT THEIR BOGS

### Austins help in great national enterprise

ROUGHLY one-seventh of Ireland is bogland. Black barren wastes, 90% water, that would drown the man who walked on them. For generations the fringes alone have been nibbled for fuel. But today a great new enterprise is beating the bogs and harvesting wealth from the wasteland.

### Ireland's biggest enterprise

Bord na Mona (the Peat Board), established in 1946, is now Ireland's biggest national industry. Its achievements in 14 years: 100,000 reclaimed acres, producing over 4 million tons of fuel a year. Employment for over 7,000 people; 2 huge hostels, 8 model villages for workers. 400 miles of railway criss-crossing the bogs. A research station, museum and factories for fuel processing and pipe making.

Bogs take 6 long years to drain and develop before production starts. Over the black expanses, enormous machines lumber, stark against the sky, trenching, cutting, stripping, turning, stacking and loading the soil. The peat is used in homes and factories or fed directly to the 6 power stations sited on the bogs. Another product, peat moss, is exported to world wide markets.

### On the road

Then there are peat briquettes. For these Bord na Mona started 2 new factories in 1958, importing 60,000 tons of material. Austin 5 tonners, one with Scammell trailer, shift 50-150 tons at a time from Dublin docks, averaging 40,000 miles a year. The Austin Scammell also tows giant machines, many 27 ft. long and 17½ tons in weight.

Passing Dublin's famous Customs House, 2 Austin 5 tonners move heavy machinery from the docks to new factory sites. The Transport Manager says: "The material must keep moving—so reliable transport is vital. Our Austins have done exceptional work here."

Austin 5 and 7 tonners transport pipes, labour and peat moss. 3 and 5 ton tipplers work on housing sites. 30 Austin vans are used for personnel and servicing and one 4-year-old 10 cwt. is a hard-working refuse collector.

The Board have run Austins for 7 years. Soon 6 new ones will swell the fleet of 67. Shaun Banks, Transport Manager, says: "Austins are doing an excellent job for us. They're very economical, with little mechanical trouble. In 1½ years I haven't had a let down. If I was asked to recommend a truck, I'd say—get an Austin."

The 4-7 ton Austin range is warranted for 12 months and backed by B.M.C. Service. Bord na Mona's Austins are supplied by Lincoln & Nolan Ltd., Dublin.

## AUSTIN

THE AUSTIN MOTOR COMPANY LIMITED  
LONGBRIDGE · BIRMINGHAM





# BEST YEAR EVER FOR B.E.A.

Profit Exceeds £2 Million

THE report of British European Airways for 1959-60 which was published on Wednesday (H.M. Stationery Office. Price 8s.) shows that it had its most successful year since the corporation was created 14 years ago. Traffic increased by 19 per cent and a record overall profit of £2,086,078 was achieved, after payment of interest at the average rate of 4.6 per cent on all capital and making full provision for amortisation, depreciation and staff pensions amounting to £4,685,000. The profit before charging interest on capital was £3,239,084 representing a return of 12 per cent on capital and reserves actively

passenger revenue rate fell from 6.7d. in 1958-59 to 6.6d. per passenger-mile in 1959-60, due to substantial reduction of many fares used by travel agents for inclusive tours to popular resorts on the Continent. It was estimated that during 1959-60 B.E.A. made a profit of some £2,800,000 on international services and lost some £700,000 on domestic services.

## Traffic Expansion

Traffic expanded from 109,366,000 load ton-miles in 1958-59 to 130,032,000 load ton-miles in 1959-60. The extra traffic carried during the year

## BRITISH EUROPEAN AIRWAYS SUMMARY OF THE YEAR 1959-60

### FINANCIAL

	1959-60	1958-59	Percentage Variation
Traffic revenue	35,209,785	30,597,438	+ 15.1
Total revenue	36,536,613	31,761,313	+ 15.0
Expenditure on operating account	33,370,762	30,302,824	+ 10.1
Total expenditure	34,450,535	31,528,618	+ 9.3
Profit before charging interest on capital	3,239,084	1,354,023	+ 139.2
Profit	2,086,078	232,695	+ 796.5

	1959-60	Percentage of Total	1958-59	Percentage of Total
TOTAL EXPENDITURE during the year comprised:	£	%	£	%
Pay, allowances and other staff costs	12,866,938	37.3	11,639,090	36.9
Aircraft fuel and oil	3,302,012	9.6	3,377,781	10.7
Aircraft maintenance and overhaul (including stores costs but excluding labour and accommodation)	3,057,448	8.9	2,576,247	8.2
Amortisation of aircraft and spares	3,008,796	8.7	2,505,851	7.9
Commission on sale of tickets, etc.	2,714,346	7.9	2,231,215	7.1
Landing fees	1,513,403	4.4	1,186,729	3.8
Accommodation costs	1,351,661	3.9	1,089,996	3.4
Interest on capital	1,153,006	3.3	1,121,328	3.6
Passenger meals and accommodation	961,217	2.8	856,848	2.7
Pensions	951,308	2.8	884,090	2.8
Aircraft insurance and uninsured losses (excluding training)	803,358	2.3	766,144	2.4
Depreciation of premises, operating and other ground equipment	725,341	2.1	584,487	1.9
Advertising and publicity	646,804	1.9	543,082	1.7
Charter of aircraft and crews	238,074	0.7	685,323	2.2
Hire of aircraft and spares	2,040	—	6,353	—
All other expenditure less recoveries	1,154,785	3.4	1,474,054	4.7
	£34,450,535	100.0	£31,528,618	100.0

employed in B.E.A. operations during the year.

The report states that B.E.A. does not wish to be judged by financial results alone, and lists a number of objectives first set out in the annual report eight years ago. These are expressed as follows:

"B.E.A. goes forward into the future with a number of basic objectives clearly before it:  
—Safety, service and the most possible economic fares—for its passengers.  
—Stability, security and the most satisfactory working conditions—for its staff, with  
—Economy, efficiency and regularity of operation—for its services."

As a publicly-owned corporation B.E.A. considers it should be judged by these wider conditions as well as by financial success. In reviewing a year which was outstandingly successful from a financial point of view the current report, therefore, tries to take stock of the degree to which B.E.A. achieved its other objectives and point to what remains to be done in the future. In one important direction a further advance was made—B.E.A. fares on many routes were substantially reduced in 1960 and a further large expansion of traffic is expected as a result. The report draws attention to the fact that B.E.A. has been able to

—20,666,000 load ton-miles—was alone greater than the total traffic carried by B.E.A. in its first 22 months of operation. The total traffic increase of 19 per cent was made up by an increase of 17 per cent in passenger-miles, 28 per cent in freight ton-miles and a reduction of 1 per cent in mail ton-miles. There was a reduction of 1 per cent in the revenue hours flown.

One of the most striking features was the increase in traffic on the domestic services. The trunk routes between London and Scotland showed an increase in passenger-miles of 33 per cent at 113,979,000, the London-Belfast figures rose by 27 per cent, those for the London, Midlands, Scotland services by 37 per cent and those from Glasgow to the Highlands and islands by 18 per cent. The last was particularly satisfactory in view of the difficulty of creating new traffic there.

## The Future

"The vista ahead of B.E.A. in the next five years is exciting," states the report. "The corporation estimates that its passenger traffic in the summer of 1965 will be more than double that carried in summer of 1959, and has placed orders for aircraft which will enable this greatly expanded

## TRAFFIC

	1959-60	1958-59	Percentage Variation
Capacity ton miles offered	191,992,307	181,054,643	+ 6.0
Load ton miles sold	130,032,466	109,366,684	+ 18.9
Revenue load factor	67.7%	60.4%	+ 12.1
Load factor required to cover total expenditure	63.8%	60.0%	+ 6.3
Cost per c.t.m.	43.1d.	41.9d.	+ 3.1
Revenue per c.t.m.	45.7d.	42.1d.	+ 8.6
Revenue per l.t.m.	67.4d.	69.7d.	— 3.3
Passengers carried	3,289,606	2,828,715	+ 16.3
Revenue passenger miles	1,153,784,735	988,328,781	+ 16.7
Available seat miles	1,662,756,681	1,581,095,727	+ 5.2
Passenger load factor	69.4%	62.5%	+ 11.0
Mail carried—tons	7,848	7,669	+ 2.3
Mail ton miles	4,001,082	4,057,872	— 1.4
Freight carried—tons	36,395	28,020	+ 29.9
Freight ton miles	14,899,914	11,619,549	+ 28.2

## OPERATIONS

	1959-60	1958-59	Percentage Variation
• Regularity	97.5%	95.9%	+ 1.7
• Punctuality (arrival)	83.3%	78.3%	+ 6.4
Line aircraft—average	109.5	115.8	— 5.5
Revenue hours flown	193,790	194,058	— 0.1
† Revenue utilisation—hours per annum	1,858	1,745	+ 6.5
† Cost per revenue flying hour	£177.8	£162.5	+ 9.4
† Revenue per revenue flying hour	£188.5	£163.7	+ 15.1
Aircraft miles flown	37,365,967	35,898,914	+ 4.1
† Cost per revenue mile flown	221.3d.	210.8d.	+ 5.0
† Revenue per revenue mile flown	234.7d.	212.3d.	+ 10.6

† Excludes helicopter operations.  
• Passenger operations only.

pass on to the travelling public substantial advantages in the form of lower fares as a result of its strengthened financial position.

## Recovery in 1959

This successful year followed one when adverse general economic and trading conditions caused a temporary setback in the upward trend of world air traffic. The general economic recovery became apparent early in 1959 and air traffic quickly resumed the high rate of expansion on which most airline plans had been based. In these conditions of general expansion B.E.A.'s traffic increase compared favourably with other airlines. World air passenger traffic in 1959 increased by 12 per cent, intra-European traffic by 13 per cent and B.E.A. passenger-miles by 18 per cent.

A further highly satisfactory feature of the traffic growth in 1959-60 was an increase of 28 per cent in freight ton-miles, and the corporation believes that it is on the brink of a major new phase in air freight development in Europe. "In almost all ways 1959-60 was a very successful year for B.E.A. Everyone in the corporation took encouragement from the achievements of the year, but we all realise how much remains to be done."

## Revenue and Operating Costs Rise

Total revenue rose to £36,536,613 in 1959-60 compared with £31,761,313 in 1958-59. International services contributed £27,233,793 (77.3 per cent) to traffic revenue and domestic services £7,795,992 (22.7 per cent). The international pas-

senger revenue rate fell from 6.7d. in 1958-59 to 6.6d. per passenger-mile in 1959-60, due to substantial reduction of many fares used by travel agents for inclusive tours to popular resorts on the Continent. It was estimated that during 1959-60 B.E.A. made a profit of some £2,800,000 on international services and lost some £700,000 on domestic services.

"Jet aircraft operating on international routes—Comets first and DH 121s later—will offer substantial time savings. On shorter routes, and particularly on domestic trunk services, the large capacity of the Vanguard should enable the rapidly growing traffic to be carried with greater speed and comfort. Big developments on the domestic trunk routes are a major feature of our future plans. Steps have already been taken in this direction. In the summer of 1960 we have increased the capacity operated on these routes by 24 per cent compared with the previous year. B.E.A. now offers 14 Viscount services each day between London and Scotland, and eight Viscount services each day between London and Manchester. In 1961 Vanguards would be introduced; capacity on domestic trunk routes would be further increased, and the travel time between London Airport and Glasgow reduced to 75 min. The report continues with the following:

"We must stress that our future plans are based upon the expectation that B.E.A. will be allowed to continue with its planned expansion, and will not have its operations curtailed as a result of decisions made by the new Air Transport Licensing Board. This emphasis is necessary because (Continued on page 11)



Type 2, Main Line, 1365 h.p. Diesel  
Electric Locomotives by Brush Electrical  
Engineering Co. for British Railways are  
being equipped with



VACUUM  
CONTROLLED  
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India—Saxby & Farmer (India) Private Ltd., Calcutta  
Australia—Westinghouse Brake (Australia) Pty. Ltd., Concord West, N.S.W.  
South Africa—Westinghouse Brake & Signal Co. S.A. (Pty.) Ltd., Johannesburg  
Agents—Bellamy & Lambie, Johannesburg

## CLASSIFIED ADVERTISEMENTS

**RATES.**—The minimum charge for classified advertisements is 7s. for 14 words or less, and 6d. for each additional word. The name and address of the advertiser is charged at the same rate. If a box number is used 2s. extra is charged to cover our name and address and postage. If set in paragraph form each paragraph is estimated separately. Official Notices and semi-display in the classified columns are charged at the rate of 48s. per single column inch.

## SITUATION VACANT

A VACANCY occurs in a progressive Company for a Transport Executive who must be fully experienced in maintenance and traffic control, costing, etc. Applicant must have the capacity of co-ordinating the many transport activities of the Company in the field of A, B and C licences, bulk, refrigerated and international transport. The Head Office is situated in a Provincial City; accommodation provided if desired with participation in Pension Scheme. Age group 35 to 45 preferred. Reply in confidence giving greatest detail possible

to Box No. 3841, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

## EDUCATIONAL

THE City of London College will hold evening classes beginning on September 26 to prepare students for the Graduateship and Associateship examinations of the Institute of Transport. Courses are also provided in Shipping and Forwarding, and in Dutch, French, German, Italian, Portuguese, Russian and Spanish, and lunch-hour classes in French, German, Italian and Spanish. Enrolment for new students: September 20, 5-7.30 p.m.

Further details of the courses are available from the Secretary of the College, Moorgate, London, E.C.2.

## TENDERS

MANUFACTURING Company moving conservative 300 tons per month invite tenders for their sole transport business. At present operating 16 and 7-ton Bedford diesels. Condition of agreement purchase of present vehicles. Box No. 3842, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

# SILVER ROADWAYS LTD.

Reliable Trunk Services to all Ports

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Staffs.  
WEST BROMWICH 2801

## LLANELLY

Morfa Works, Llanelly  
LLANELLY 4302

## LONDON

22-24 Bernondsey Wall West,  
S.E.16  
BERMONDSEY 4533

## CARDIFF

10 Dumfries Place  
CARDIFF 21631

## SWANSEA

Exchange Buildings  
SWANSEA 54171/2

## GLASGOW

12 Dixon Street, C.2  
CITY 3381

## LIVERPOOL

11 Old Hall Street, Liverpool, 3  
CENTRAL 6386

## NOTTINGHAM

Pavilion Building, Pavilion Road,  
West Bridgford  
NOTTINGHAM 63461

## OFFICIAL NOTICE ANNOUNCEMENTS

Official Notices, Tenders, and other announcements, can be accepted up to first post Tuesday morning for insertion in the current week's issue.  
Rate: 48s. per single column inch.

OFFICIAL NOTICES  
MODERN TRANSPORT, 3-16 WOBURN PLACE, LONDON, W.C.1



## A.E.C. REGAL VI

## New High-Capacity Single-Decker

**F**IRST of the new vehicles for introduction at the 1960 Commercial Vehicle Exhibition to be announced officially is the A.E.C. Regal VI—a high-capacity underfloor-engined single-deck passenger chassis, full details of which are released this week. Also on public view for the first time on the A.E.C. stand will be the Marshal medium-weight three-axle goods chassis, which was announced earlier this year; these will be accompanied on the stand by examples of the established Mercury and Mammoth Major goods vehicles, the popular Reliance medium-capacity single-decker and a production London Transport RM double-decker, features of which are integral construction, independent front suspension and automatic transmission.

The Regal Mark VI is an entirely new vehicle, replacing the Regal IV and completing the new A.E.C. heavy-vehicle range incorporating the A590 and A690 wet-liner six-cylinder diesel engines, the first of which were introduced at Earls Court

The new engine is especially noteworthy for having the C.A.V. DPA distributor fuel-injection pump as standard equipment, the first engine of this size to be so equipped in a British vehicle, although A.E.C. diesel engines fitted with the DPA pump are operating successfully in Canadian-built buses.

## Frame Layout

In its frame assembly the Regal VI bears a strong resemblance to the very successful Reliance chassis, having straight parallel 8-in. deep side-members with full-length flitch plates and over-hung rear springs mounted outside the frame at the rear and having negative camber under load, unlike the Regal IV, which had underslung rear springs. Also unlike the earlier Regal, which had the engine suspended under one sidemember, the Mark VI has the engine mounted centrally on crossmembers through four rubber sandwich mountings, with a fifth sandwich unit set above

of 690 cu. in. (11.31 litres). In the Regal VI application it is set to produce 168 b.h.p. at 2,000 r.p.m. and maximum torque of 505 lb./ft. The S.A.E. rating is 192 b.h.p. Standard practice adopted for the A.E.C. A range of engines is followed, embracing offset toroidal combustion chambers in the piston crowns, seven main-bearing forged-steel hardened and balanced crankshaft, renewable thin-shell bearings and renewable wet-type cylinder liners. A viscous-fluid crankshaft damper is a standard fitting and all engine accessories are positively driven.

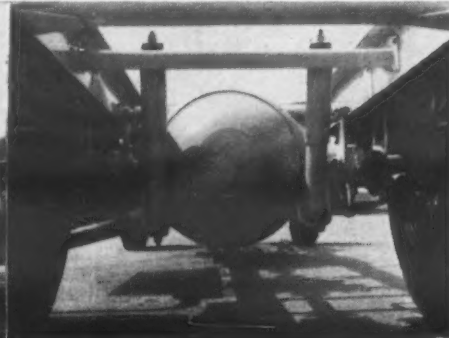
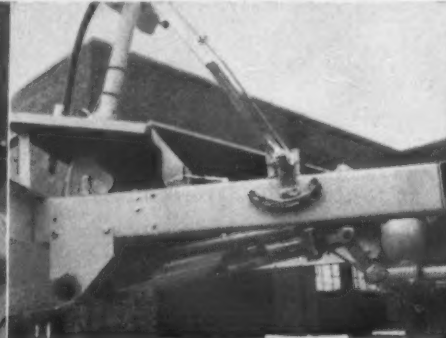
The DPA pump is driven in tandem with the air compressor from the gearcase, both being mounted accessibly on top of the engine casing, unlike the Regal IV, in which the compressor was driven from a separate shaft-driven auxiliaries drive box ahead of the engine. The separate drive box is retained in the Regal VI, being driven by Layrub-jointed shaft from the crankshaft, and drives for the generator, water pump and fan are taken from it.



The Marshal medium-duty six-wheeler for 20 tons gross in this country



Regal VI units: the centrally mounted AH690 engine with air compressor and DPA pump taking little space on top; the optional Hydrosteer steering servo as mounted for left-hand control; (right) the new spiral bevel rear axle, dampers and widely based springs



two years ago. The Regal VI similarly incorporates one of the new-type engines, the AH690 690-cu. in. (11.3-litre) unit horizontalised for underfloor mounting and, as with the earlier 11.3-litre horizontal engine, having dry-sump lubrication with the oil tank carried in the normal sump position.

the engine in the vertical plane at an angle to the transverse axis, where it provides fore-and-aft location and damps excessive engine oscillation.

The AH690 is a direct-injection engine having bore and stroke measurements of 5.12 in. (130 mm.) and 5.59 in. (142 mm.), giving a swept volume

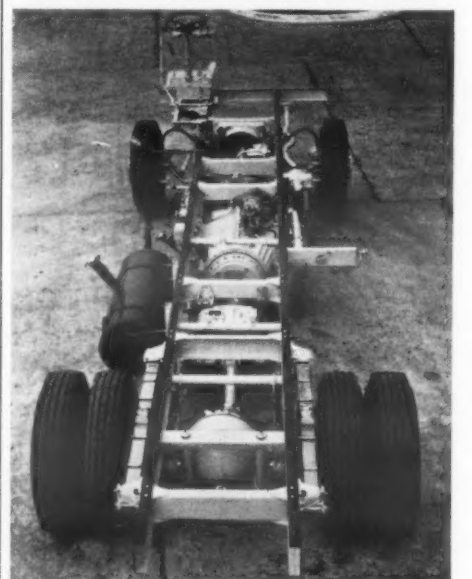
But it now appears in simpler form, having two shafts instead of three, since the fan on the Regal VI operates at engine speed instead of through a step-up gear. To obtain the necessary output at the lower speed and within the restricted diameter, a twin-rotor fan is now used with a

stator stage between the rotors. A diaphragm lift pump feeds the DPA pump through paper-element filters and the injection pump incorporates the remarkably stable mechanical governor developed by C.A.V. for the DPA unit. Provision is made on the engine timing case for mounting a gear-driven Plessey hydraulic pump to power an optional Hydrosteer steering servo.

## Automatic Transmission

Transmission can be clutchless semi-automatic or fully automatic (with positive driven override) through a fluid flywheel and separately mounted four-speed A.E.C. licence-built Wilson epicyclic gearbox—the electro-pneumatic Monocontrol or Automonocontrol systems already well proved on the earlier Regal and other A.E.C. passenger vehicles. Standard gear ratios are 4.28, 2.42, 1.59 and 1 to 1 forward, and 5.98 to 1 reverse. Seamless open tubular propeller shafts incorporate Hardy Spicer 1600 series needle roller bearing joints. The worm-drive axle of the Regal IV gives way on the Mark VI to a new spiral-bevel unit, with massive 17½-in. diameter crown wheel and fully floating half shafts, in a fabricated pressed-steel housing. A choice of six different ratios is available.

Suspension is by conventional semi-elliptic springs, 62 in. between centres front and 64 in. rear, all ¾ in. wide. Double-acting telescopic dampers are fitted all round and all springs are fitted with shackle stops to restrict axle movement in case of spring failure, while all leaves are shot peened to increase fatigue resistance. Steering is by worm and nut gear and hydraulic power assistance is optional. Air-pressure brakes follow the sound design developed for the earlier Regal, embodying S-profile cams, diaphragm actuation and Bendix-Westinghouse slack adjusters. A single brake-pedal valve is standard but provision is made for incorporating a dual valve and separate front and rear circuits when this is speci-



A striking view of the Regal VI chassis showing kinship with the Reliance, though all major units of the new Regal are new

fied. Total lining area is 746 sq. in. (4,813 sq. cm.). Standard tyres are 11.00-20 16-ply front and 11.00-20 12-ply twins rear.

The Regal VI is offered in two wheelbase lengths, namely 17 ft. 6 in. (5.334 m.) for 33 ft. (10.06 m.) bodywork and 19 ft. 6 in. (5.943 m.) for 36 ft. (10.97 m.) body, and for a nominal overall width of 8 ft. (2.44 m.). Front overhang is 6 ft. 6 in. (1.98 m.), frame height laden is 34½ in. (870 mm.) and ground clearance under the engine sump is 10½ in. (264 mm.). Chassis kerb weight is about 5 tons 4 cwt. and when not restricted by legislation the vehicle is cleared for operation at a maximum gross weight of 35,275 lb. (16,000 kg.), subject to provision of suitable wheels and tyres.

## Marshal Six-Wheeler

The Marshal three-axle goods chassis, which we described in our March 19 issue, was developed by A.E.C., Limited, largely from units common to the Mercury-Monarch VI range especially for operation in those overseas territories where axle loads are restricted by legislation, though it is also cleared for home operation at the maximum permissible weight of 20 tons. Powered by the AV470 diesel engine of up to 125 b.h.p. at 2,200 r.p.m. driving through the A.E.C. five-speed synchromesh gearbox, the Marshal is offered in wheelbases of 11 ft. 9 in. (3.58 m.) and 15 ft. 7 in. (4.75 m.).

The chassis is notable for employing the Eaton-Hendrickson fully articulated double-drive bogie, the axles of which are machined to take standard A.E.C. medium-range hubs and brakes. The axles are single-reduction spiral bevel units, the helical drive to the leading axle incorporating an inter-axle differential capable of being locked through a cab control under low-traction conditions. An interesting feature is the bogie suspension, comprising four rubber cushions shaped to provide progressive action under varying loadings through which four alignment and driving pins pass. An equalising beam apportions the load and radius rods locate the axles; all bushings are of rubber, eliminating normal maintenance.

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**2** **British Standards Specification 3152 (Type C)**  
The inhibitor used is Sodium Tetraborate, commonly known as Borax. This affords good protection to cast iron against corrosion and this type is quite good for cast iron systems, such as heavy duty diesels. It does not afford the desired degree of protection to non-ferrous metals and therefore it is not recommended by us for use in engines which contain alloy components.

**3** **British Standards Specification 3150 (Type A)**  
Inhibitors used are Triethanolamine Phosphate and Sodium Mercaptobenzothiazole. This Specification is identical to DTD. 779. It is generally suitable for engines running under relatively light service conditions and in engines containing large amounts of aluminium alloy and other non-ferrous components. It is not recommended by us for heavy duty diesel engines or engines in which a high amount of turbulence in cylinder heads etc., is encountered.

**4** **HOLTS ANTIFREEZE**  
An "all-purpose" Antifreeze that has been especially developed by Holts. It is in fact a combination of the advantages of B.S.S. 3150, with the buffering action of B.S.S. 3152. It is particularly suitable for the modern automobile engine which contains a wide variety of metals, including aluminium. Where a Fleet owner operates a variety of vehicles it is recommended by us for universal use except on the most Heavy Duty Diesel types of vehicles where B.S.S. 3151 is recommended with the alternative of B.S.S. 3152.

N.B.—All four types are based on Ethylene Glycol to B.S.S. 2537 and give protection against complete solidification down to —3°F (20% solution) or down to —18°F (25% solution)

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## RETAIL FISH DISTRIBUTION IN LONDON

*Up-to-the-Minute Centre at Finsbury Park*

### EARLY MORNING DELIVERY SERVICE

NOW in full operation at Finsbury Park, adjoining Finsbury Park Station, is the London and Home Counties processing and distribution centre of Mac Fisheries, Limited. It is considered to be the largest of its class in the world and provides a 24-hour trawler-to-table service. With a railway siding able to accommodate 18 fish wagons at a time, the £500,000 centre is connected by direct rail link with

food industry. Incorrect handling during any phase of the journey from the ports to the shops could lead to deterioration in condition and appearance. Fish purchased by the company's buyers at the ports is packed in clean hygienic metal containers and iced for its journey southwards. On arrival at the centre all fish is inspected by a quality control. Before return to the coast, metal containers are steam cleaned to ensure com-



Unloading platform at the Mac Fisheries depot seen from rail level

Scottish, Humber and other fishing ports. As many as five special fish trains from various ports may arrive during the night, until 5 a.m., in addition to which some fish is received on road vehicles. Between 50 and 60 tons of fresh fish are unloaded each morning. The centre distributes this fish, landed the previous day, by a road fleet to over 200 Mac Fisheries shops so that it is on sale within 24 hours of landing. A total of upwards of 90 tons of fresh foods will be handled daily in different departments of the 27,820 sq. ft. depot.

### Vital Communications System

The centre is in constant touch by teleprinter and telephone with some 35 fishing ports around

plete cleanliness before use. Fish is again iced before dispatch to branches. A modern ice-making plant, the first of its kind in the country, supplies some five tons of ice daily.

There are frozen fish and wet fish stores and a low-temperature cold store, which can be used to hold stocks of fresh foods, including poultry and game. Other processes carried on at Finsbury Park are the cooking of shellfish to order, preparation of poultry, distribution of fresh eggs, fish frying and manufacture of fish cakes. As the extensive programme for new and modernised Mac Fisheries shops proceeds provision will be made for the sale of fruit and vegetables and even groceries in suitable instances.

In all some 50 vehicles attached to or maintained at the depot cover some 500,000 miles each year. Both major and routine maintenance is carried out in a garage forming part of the centre. In addition to the large delivery vans there are 5-cwt. Morris shop vans. The building is designed to accommodate six 5-ton vehicles at once. A Bradbury 5-ton lift is installed. Chassis lubrication is carried out by Tecalemit HP drum pump but a number of the vehicles has automatic chassis lubrication. Other equipment includes a Crypton mobile fast-charger and fault locator, a Wolf valve grinder, drilling and grinding machines, a Weaver press, plug-testing equipment, Harvey Frost jack crane, and Epco three- and five-ton jacks.

### Site Problems

The site for the new extensions adjoined an existing building and was alongside sidings in the goods yards at Finsbury Park Station. There was a very steep fall of approximately 18 ft. from the railway track to the level in an adjacent road. The architects, Messrs. Handiside and Taylor, A.R.I.B.A., were required to provide within the site a main fish handling area with access for unloading from the railway; a vehicle repair shop; a fairly large plant for refrigeration and other plant, office accommodation, an ice-making plant, provision for cold water storage of 10,000 gal., boiler and fuel storage as well as much ancillary accommodation. The general contractor was Gee, Walker and Slater, Limited. The centre is U-shaped in layout,



A train has arrived and is being unloaded at 2.30 a.m.

the coasts of the U.K.; daily liaison is also maintained with all Continental fishing ports. Thus a complete picture of the current fish supply situation at the different ports is available within minutes; supplies can be bought at the most advantageous price for quality and routed to London within a matter of hours of landing. This intelligence system is aided by the use of 'walkie-talkie' operators at the quayside who flash information to area offices for onward transmission to Finsbury Park.

A digest of this information is available to all branches served by the centre. Shops order as many as 400 separate items, which involves a high degree of co-ordination to ensure that waiting vans are loaded and dispatched by 6 a.m., the latest scheduled departure time. A feature of the road distribution is that much of it is completed by the time that the streets begin to fill up and the company is therefore not greatly troubled by unloading restrictions. By midday the vans are back at the depot for washing out. This early morning delivery service is operated by some 30 Morris-Commercial vehicles with special unpainted light alloy bodies with sliding side and opening rear doors permitting easy access to any part of the load. Each van serves from seven to 10 shops, travels on average 80 miles each day. Shops up to 50 miles around London receive supplies from the centre and others even farther afield will be served in the near future.

### Distribution Floor

Approximately half of the fish from special trains is transferred immediately to waiting vans in bulk orders. The remainder of unloaded fish is broken down into small lots on the main distribution floor. Here shop orders are assembled in aluminium containers which are moved from one scalesman to the next on a system of gravity and powered roller conveyors. Each scale adds its contribution—plaice, halibut, etc.—to the order until completion. The loaded containers are then moved to the dispatch area on stillages through the medium of Collis hand stillage trucks.

### Handling and Hygiene

Handling and transporting fish are probably the most critical operations in the whole of the



Three hours later the drivers are loading the road vans for the various delivery rounds to the shops

with the railway siding on one flank and the road vehicle loading area enclosed by the two arms.

The Witton Moulded Insulation Works of the General Electric Co., Limited, has outgrown its name and is now to be known as G.E.C. Moulded Plastics Division. For more than 40 years, G.E.C. has been moulding plastics at Witton but has long since ceased to be restricted to products concerned with insulation or even to the electrical industry; today moulding is undertaken for a large number of industries in practically the whole range of thermoplastic and thermosetting materials together with mouldings in bituminous and hard rubber materials.

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which, in their own words "combines excellent workmanship with incredible economy." And here's the proof of that economy:

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## Australian Moving Pavement

Work has started on a 700-ft. £A.86,000 moving pavement in a tunnel between the Domain underground parking station and Hyde Park in Sydney.

## Bridge Restriction in S.W. London

A 5-ton weight limit has been placed on the railway bridge in Larkhall Rise, Clapham. This is a north-south relief route for traffic in south-west London.

## Manchester Mayfield Trains Diverted

As from 6.0 a.m. today (August 27) Manchester Mayfield Station is no longer used for passenger trains, and from this date trains which are shown in the timetable as running to and from Mayfield Station run to and start from London Road Station.

## London Midland Region Stations

The following London Midland Region stations will be closed to passenger traffic from September 12: Brandon and Wolston, Doe Hill, Hoghton, Arkholme, Borwick, Port Dinorwic, and Aber. Some stations will be closed for freight or parcels traffic also.

## N.Z. Diesel Expresses

Accelerated, diesel-hauled Scenic Daylight express passenger trains will run between Auckland and Wellington every Saturday and Monday during the coming summer holidays. The service will begin on December 17, and will end for the season on January 30. Reduced fares will apply for travel on these trains. The route includes some of the best North Island scenery.

## Netherlands Railways Operations

In 1959 Netherlands Railways made a profit of nearly 10 million guilders (about £1 million) compared with only 0.2 million guilders in the previous year. However, income from passenger services decreased although freight transport yielded more. Operating costs decreased. Over 83 per cent of all passenger trains ran on time, and less than one in a thousand trains was more than four minutes late, it is claimed.

## Windsor—Eton By-Pass Route

The route suggested by Berkshire County Council for a new Windsor—Eton relief road on the Berkshire side of the Thames has been rejected by the Minister of Transport because it would mean the demolition of too much private property and would go through a residential part of Windsor. He has approved the Buckinghamshire part of the scheme, a by-pass to Eton College on the west side and a crossing of the Thames nearby.

## Widening at Oxford Circus

Work is to go ahead on a limited scheme for the widening of Oxford Street between Holles Street and Regent Street, i.e. immediately west of Oxford Circus. It will provide for the widening of the carriageway from 46 ft. to 55 ft., with an arcade over the footway along part of the frontage at Oxford Circus. This widening will provide an extra lane for eastbound traffic and will reduce the delays which frequently occur in this quarter of Oxford Circus.

## Towers May Replace Lightships

Within a short space of time, the U.S. National Geographical Society predicts, conventional lightships around the American coasts will disappear, being replaced by platforms and towers on permanent pilings such as already used in oil exploration.

## Road Overbuilding Possibilities

About £379,000 was paid in New York last week for "air rights," the right to build over a sunken highway which has been constructed. The new building, a block of flats, will have its base below the ground level of adjacent property. Similar schemes have been carried out elsewhere in New York.

## Manchester to Seek Powers for Road

A recommendation that Manchester City Council seek Parliamentary powers to build a road, costing £6 millions, between Fairfield Street and Chester Road, was made last week by the general and parliamentary committee. The scheme includes 1,200 yd. of fly-over 22 ft. above the ground. The new road scheme was approved by the city council a year ago, but it was decided at that time not to seek parliamentary powers to build it.

## Details of Perry Barr Grade Intersection

In the major reconstruction of the Perry Barr cross roads in Birmingham, on which work starts shortly, Birchfield Road is to be carried under the ring road by an underpass 400 yd. long and 40 ft. wide, the two roads being connected by slip roads with a roundabout at the higher level. Included in the scheme is the reconstruction of Perry Barr Station and the bridge above it. The underpass will incorporate electrical elements to prevent icing.

## E.A.R. Branch Line Open

The new East African Railways branch line from Kilosa on the Tanganyika Central Line to Mikumi was opened for traffic on August 15. The line, costing in the region of £715,000, is 44 miles in length and will provide a new railhead for the traffic of the Southern Highlands of Tanganyika, which at present is dealt with at Morogoro. It will also advance railhead to within 24 miles of the Kilombero Valley sugar project. There is one intermediate station on the section, Mbamba, 19 miles from Kilosa.

## Signalling Progress on Rhodesia Railways

A local colour light signalling system controlling all train movements has just been brought into use by Rhodesia Railways at Dett. Similar local systems are in use at a number of other centres, among them Somabula and Lochinvar. The c.t.c. installation is progressing on the north line, too, and will soon be operating between Livingstone and Matetsi. It is hoped that the Matetsi—Thomson Junction section may be completed by the end of the year, in which case the 398 miles from Gwelo to Livingstone will be controlled by c.t.c. and by local colour light installations at the busier centres. C.t.c. came into operation between Lochinvar (Salisbury) and Makwiro towards the end of July and work is continuing on this line towards Gatooma.



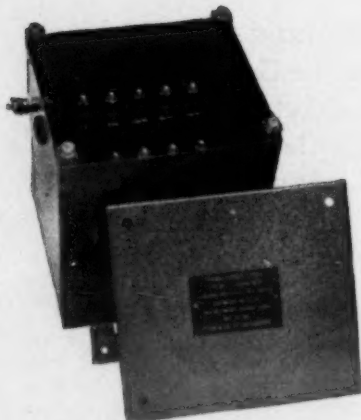
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## INDICATING-REPEATING

Type ST/AP: 4VA—110-90-0-10/12V. 50 c/s. Weight 2 lb., size  $4\frac{7}{8}'' \times 3'' \times 2\frac{1}{2}''$ .

## CABIN or LOCATION

Type ST/AH: 250VA—200-230-250/110-220V. 50 c/s.  
Weight 16½ lb., size  $6\frac{1}{2}'' \times 6\frac{1}{2}'' \times 4\frac{1}{2}''$ .

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Type ST/AR: 250VA—650-617-585/113-110-107V. 50 c/s.  
Weight: 22½ lb., size of case  $10\frac{1}{2}'' \times 8\frac{1}{2}'' \times 10''$ .  
Ventilated metal case finished hammer stone grey.

Terminals: 2BA, 0BA, or  $\frac{1}{8}''$  BSF, with or without shrouds.

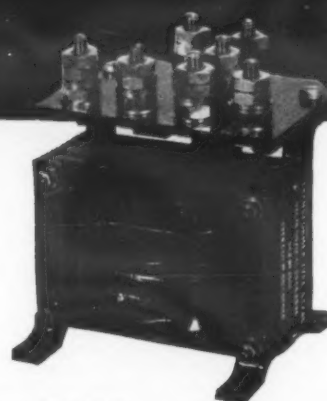
Laminations: standard quality.

Winding Insulation: cotton, fabric or other types (e.g. "Lewmex").

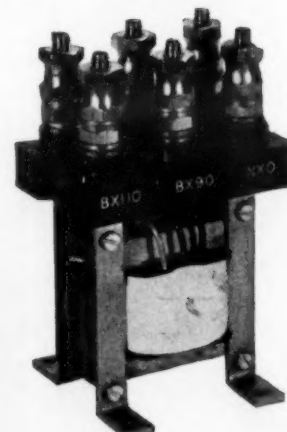
Vacuum Impregnation: moisture and damp proof.

Mountings: Horizontal or vertical, with or without cases.

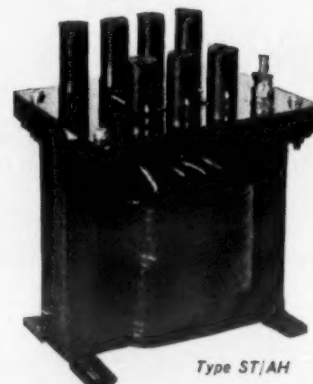
Casework: Cast or sheet iron, galvanised or hammer stone grey.



Type ST/AL



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## COMMERCIAL AVIATION

### Q.E.A. Results Satisfactory

#### SWISSAIR TRAFFIC

IT was announced last week by Senator S. D. Paltridge, the Australian Minister for Civil Aviation, that Qantas Empire Airways had made a net profit of £A835,963. This profit was a striking indication of the company's commercial soundness, enterprise and acumen with which it met the challenges of the jet age. The profit also reflected the soundness of the Qantas decision to buy the Boeing 707-138. These aircraft had now been operating for over one year on the network and had proved remarkably efficient mechanically, and attractive to passengers. After adding £A124,258 undistributed profit brought forward from the previous year, £A978,221 was available for distribution, and the directors recommended a payment of 5 per cent dividend to the Treasury. This would require £A596,130. Of the balance the directors recommended that £A300,000 be written off against training and pre-operational costs involved in the introduction of the new aircraft in 1959. The remaining £A82,091 would be carried forward as 1960 undistributed profit. He added that despite the company's spectacular increase in profit in 1959, by normal commercial standards these results were still somewhat marginal with an operating profit of only 3½ per cent on turnover, and 7 per cent on average capital. In addition, the equipment advantage Qantas achieved in 1959 was now changing considerably as more competitors re-equipped with jets. However, the Government and the management of Qantas were confident of the company's ability to meet this mounting competition and to improve the profit.

#### Congestion on Roads in London Airport

Traffic jams at London Airport Central are causing many passengers, arriving at the airport by private cars, to miss their flights. The problem is becoming so acute that a special campaign has been opened by British European Airways, whose staff is responsible for dealing with more than 80 per cent of all the 120,000 passengers a week passing through London Airport Central, to persuade air travellers that it is quicker—and more reliable—to travel by B.E.A. coach between the airport and the West London Air Terminal in Cromwell Road.

#### New K.L.M. Services To Africa

An agreement has been signed between Holland and Ghana which will allow K.L.M. (Royal Dutch Airlines) to operate a twice-weekly air service between Europe and Accra. K.L.M. has announced that it will inaugurate the service with the commencement of its winter schedule in November. Lockheed Super Constellation aircraft will be used initially but it is intended to replace these later with Electras. The Dutch airline hopes to include Lagos on this service and discussions on this proposal are taking place between the Dutch and Nigerian governments. On November 5, K.L.M. will inaugurate another service to Africa, serving Conakry and Monrovia. This service was due to have commenced this month but has been postponed for operational reasons. This service will be flown once weekly with Electras.

#### Swissair in First Half of 1960

Swissair carried 10 per cent more traffic in the first half of 1960 than in the same period a year previously. Capacity produced rose by 6 per cent, resulting in an improved average load factor on the scheduled services of 59.9 per cent, compared with 57.6 per cent for the first half of 1959. Freight traffic showed relatively the largest expansion with a rise of 16 per cent. In the period under review Swissair received its first Douglas DC8 and Caravelle jets which were put into service on the North Atlantic and between London and Zurich from the end of May. The results achieved with the new aircraft were highly encouraging; the Caravelle carried between Zurich and London in the first 30 days of operation a total of 7,425 passengers, corresponding to an average utilisation of 75.2 per cent, while the DC8 carried 2,369 passengers across the North Atlantic in the first month of operation, producing a seat utilisation of 75.9 per cent. Owing to the delayed delivery of the first DC8 less traffic was carried on the North Atlantic in the period under review than the company had anticipated. This setback was aggravated by the fact that on other sectors, too, not all services originally planned could be operated with consequent inability to achieve a corresponding lowering of costs. It is expected, however, that the situation will largely improve in the second half of the year.

#### Southampton Airport Still Doomed?

Southampton Corporation has turned down a proposal that it should repurchase Southampton Airport and operate it as a municipal enterprise. The Labour majority group voted down a Conservative-Ratepayer resolution calling for the opening of immediate negotiations with the Ministry, which has served notice of the withdrawal of flying facilities at the airport at a date to be fixed next spring. Alderman Ronald Pugh asked the Council to reverse the recommendation of the finance committee, and argued that the buying of the airport would be a reasonable risk to take, even at an expenditure of a 4d. rate. He considered it would be criminal to throw an airport away, and said the figures on which the Council had decided in 1958 not to take over the airport had never been investigated. "We should be buying the airport back on the instalment plan," he said, "running air services in the meantime, and have the airport back at the end of the time, for a 4d. rate, accepting the Borough Treasurer's figures. If the operators remained or returned, it is likely the charge could be reduced." At the moment the airport had only grass runways and did not work for five months of the year. With a hard runway it could be operated all the year round, bringing in additional revenue.

Existing aircraft operators wished to remain at Southampton; B.E.A. said they could use its Viscounts there; the Corporation knew how to run the airport at a profit, having done so in the past; the Ministry's operation had been extravagant, so its figures should be disregarded; the cost would be within the Council's capacity. Alderman J. H. Matthews feared that the corporation might put a lot of capital into the airport and then find it by-passed. The basic question was whether there was justification for maintaining a minor airport which would require a substantial and continuous subsidy from the ratepayers. He pointed out that no commercial concern was willing to operate it, although Southampton Chamber of Commerce had tried quite hard. There was no evidence that its closure would affect trade, prosperity or employment. He felt it would be wrong policy for the council to accept the financial responsibility.

## MINISTER OF AVIATION



*Peter Thorneycroft*

Right Hon. PETER THORNEYCROFT,  
P.C., M.P.

• • • • •

Appointed Minister of Aviation in the recent Government changes, Mr. (George Edward) Peter Thorneycroft has been Conservative M.P. for Monmouth since 1945, having previously represented Stafford from 1938 to 1945. Born on July 26, 1909, he was educated at Eton and the Royal Military Academy, Woolwich. In 1930 he was commissioned in the Royal Artillery, but he resigned three years later and read law, being called to the Bar of the Inner Temple in 1935 and thereafter practising in Birmingham on the Oxford circuit. Parliamentary Secretary to the Ministry of War Transport in the caretaker government of 1945, Mr. Thorneycroft continued to take a close interest in transport affairs whilst his party formed the Opposition. When the Conservatives returned to power in 1951 he became President of the Board of Trade and was made a Privy Councillor. He remained at the Board of Trade until January, 1957, when he became Chancellor of the Exchequer, but a year later he resigned as he did not approve the Government's financial policy. Since then he had been concerned with various business interests and was, inter alia, chairman of Pirelli, Limited. Mr. Thorneycroft has taken up his new office at a time when important decisions will be required in a number of fields and particularly such matters as the development of a new supersonic air liner.

## LETTERS TO THE EDITOR

### The Victoria Line

#### LONDON TRANSPORT PUBLICITY

SIR.—Further to my letter (MODERN TRANSPORT, February 26, 1960) regarding the Victoria Line, I would be the last to deny that the scheme in one form or another has run the gauntlet of quite a number of Parliamentary and other committees. This makes it all the more remarkable that such obvious features as the virtual duplication of overhead lines should appear to have been deemed unworthy of comment. At the same time a lot appears to have been made of the fact that the line would not follow the overhead road pattern—a difference too subtle to be readily apparent.

One wonders if the utilisation of the Tottenham and Forest Gate line would in fact be as unsatisfactory as a cursory examination would appear to suggest. This railway is admittedly a well-used artery for freight traffic. Nevertheless, it is closely paralleled by the Great Eastern Line to Stratford, and the 7½-chain south-west curve at present acts as a somewhat unsatisfactory link between this line and South Tottenham. If, however, this curve were reconstructed with an easier radius linking with the slow Great Eastern lines on the up side of the fast ones a first-class freight route could be inaugurated. By traversing the skirting loop at Stratford the original route would be regained at Forest Gate Junction. Although admittedly a trifle longer than the Midland route this would have considerable advantages in other respects, such as improved access to dockland, Temple Mills and Stratford. The assimilation of the remaining freight traffic coupled with the once-hourly (!) stopping trains between Kentish Town and Barking should offer little difficulty.

#### Reviving 1901 Powers

The comparatively short portion of the Tottenham and Hampstead line between Harringay Arena (the most convenient surfacing point) and South Tottenham would doubtless have to be quadrupled. This would involve reviving powers originally obtained in 1901 and the engineering difficulties involved would not be considerable. The cost of segregating freight traffic on the Tottenham and Hampstead Line and diverting it via Stratford—including possibly the provision of a fly-over near South Tottenham similar to that at Barking—would certainly be less than the £10 millions or so which would be incurred by building this section of the line at deep tube level.

Surely any suggestion that the stations on the surface lines are badly sited is merely a quibble? The existing line intersects the main traffic arteries and any re-siting would be a comparatively simple task, as was done at South Harrow and is even now taking place at Pinner and Northwood. Many tube stations are for that matter poorly situated—as for example Maida Vale on the Bakerloo Line. Unfortunately, once a tube line has been equipped with stations their situation is virtually irrevocable; only one new tube station—Holborn (Kingsway)—has in fact been inaugurated. It is surely significant, however, that the proposed L.T.E. stations are practically adjacent to the existing surface ones.

#### Has Integration Been Fully Considered?

It is reasonable to suggest that any extension of suburban railway facilities in this section of London should form part of a connecting fourth rail d.c. service and it would surely have been preferable to electrify the Enfield and Chingford branches on this system so as to permit through running. One does wonder whether the whole matter of integrated transport facilities in London has been fully considered or whether the Victoria Line has been planned as an independent entity completely out of context.

The above comments should not be taken as condoning the rest of the Victoria Line as it stands—far from it. But it does indeed seem remarkable (as Mr. Crossley has pointed out) that in the aura of publicity surrounding the scheme, the very existence of the adjacent overland route appears to have been virtually ignored. Do the Tottenham lines constitute an up-to-date version of the Emperor's New Clothes?—Yours faithfully,

JOHN R. BATES.

15 Landswood Road, Oldbury, Birmingham.

#### London Transport Publicity

SIR,—May I take up a point made by Mr. E. N. Osborne in his letter published in your issue of August 13?

The route he advocates between Twickenham and Colindale (via Southern and London Midland Region trains, and then by London Transport bus and Northern Line tube train), and which he defies anyone to find on one folder map, is shown quite clearly on London Transport's free folder map headed "London's Transport Systems." This map, which shows London Transport and British Railways services, has been issued for four years, and in that time well over a million copies have been distributed. It can be obtained at the London Transport travel inquiry offices at Piccadilly Circus and St. James's Park Underground stations, the City Information Centre in St. Paul's Churchyard, or from London Transport's Publicity Officer at 280 Marylebone Road, London, N.W.1, and it appears on stations in poster form.

Mr. Osborne's complaint that the London Transport Country Bus and Green Line Coach Routes pocket map does not show Central Bus routes is perhaps best answered by a glance at the map itself. If it showed central routes in such a form as to be of any practical use, its size would have to be so much increased that it would not be a pocket map any longer. A separate map is available for the Central Area and this, within its scope, shows Country bus routes where they give connections on the fringe of the Central bus area.

May I also draw attention to the series of local timetables issued regularly by London Transport? These give all London Transport and British Railways services in the area concerned and also, where appropriate, services provided by other road operators. The booklets include maps and street plans.

Even if Mr. Osborne could assimilate more printed information than is already given by these means, it must be quite doubtful whether the ordinary intending or potential passenger could do so. What most people do is to ring up ABBey 1234 and get the answers, whatever form of transport is most appropriate for the journey.—Yours faithfully,

R. M. ROBBINS,  
Chief Public Relations Officer,  
London Transport Executive.

55 Broadway, S.W.1.



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## SHORT SEA CRUISES

## Cross-Channel Connections for Passengers

SHIPS and the sea have a never-ending fascination and for many their enjoyment is enhanced through the medium of the cruise which can be of short or long duration according to individual taste. The day excursion from some coastal resort and the luxury cruise to distant lands are well known features of maritime commerce, but perhaps less familiar are the facilities available for the enjoyment of a voyage of moderate length and cost.

The short sea trade routes between United Kingdom and near Continental ports, supplemented by those serving the Republic of Ireland, Isle of Man, Northern Ireland and the outposts of the Scottish mainland and islands, enable a wide range of tours to be planned and in recent years these services have been amplified by a number of special short sea cruises operated principally by British Transport Commission vessels, a feature which has again developed during the present year. In addition to the above a number of cruises of luxury type also sail the same waters and there are opportunities for travel on some of the Atlantic liners whilst on passage between certain ports in northern Europe.

## Regular Cross-Channel Services

Dealing firstly with regular cross-Channel services as a means to an end in working out individual tours a study of the list below shows 60 services sailing at regular intervals between ports in Great Britain and ports extending from Scandinavia (excluding Finland) in the north east, northern France in the south, Ireland in the west round to the outer Hebrides in the north west. The list ignores any services of purely local coastal nature such as those serving the Isle of Wight or Firth of Clyde, but does include those to the Scilly Isles, Outer Hebrides, Orkney and Shetland as distance or voyage time bring them into a higher category.

It will be observed that all the well-known night crossings are incorporated in the list and although they are familiar to the devotees of the "travel by

night and save a day" school of business travellers they may not have been considered as links in a chain of pleasure cruises. Nevertheless they can be so included particularly as it is only during part of the year—mainly the non-holiday period—when the whole voyage is taken entirely during the hours of darkness.

Furthermore a number of the regular overnight channel crossings have their daylight counterparts particularly during the summer months, for example Harwich to Hook of Holland and Holyhead to Dun Laoghaire.

## Daylight Crossings

On the shorter channel runs there are ample opportunities for daylight crossings whilst on the longer Scandinavian runs both day and night travel is involved. Many of the cross-Channel services are provided by various regions of British Railways in conjunction with their foreign counterparts and associated shipowners. Others are operated by independent shipowners of several flags. Practically all services now running have had a long history and the modern vessels of today are manned by officers and men carrying on the great traditions of the sea.

According to their sailings all ships are well appointed for travel by day or by night, and

Ref. No.	Service	Shipowner
ORKNEY and SHETLAND		
1	Scrabster (Thurso)—Stromness (Orkney)	N of S.O. and S.S. Company
2	Leith, Aberdeen—Kirkwall, Stromness (Orkney)	
3	Leith, Aberdeen—Kirkwall (Orkney)	
4	Aberdeen—Lerwick direct	
5	Lerwick—North Isles of Shetland	
U.K.—NORWAY		
6	Newcastle upon Tyne—Bergen direct	Bergen Line
7	Newcastle upon Tyne—Stravanger Haugesund, Bergen	
8	Newcastle upon Tyne—Kristiansand, Oslo	Fred Olsen Line
9	Newcastle upon Tyne—Oslo direct	
U.K.—SWEDEN		
10	London (Tilbury)—Gothenburg	Swedish Lloyd
U.K.—DENMARK		
*11	Newcastle upon Tyne—Esbjerg	United S.S. Company
12	Harwich—Esbjerg	
*13	Goole—Copenhagen	A.H.L., Limited
U.K.—GERMANY		
*14	Goole (and/or Hull on return)—Bremen, Hamburg	A.H.L., Limited
*15	Hull—Bremen, Hamburg	
U.K.—NETHERLANDS		
16	Hull—Rotterdam	A.H.L., Limited
17	Harwich—Hook of Holland	B.R. — Night Zeeland S.S. Company—Day
*18	Harwich—Zeebrugge (train ferry)	B.R.
U.K.—BELGIUM		
*19	London (Tilbury)—Antwerp	Transport Ferry Service
20	Dover—Ostend	
21	Dover—Ostend (car ferry)	Belgian Marine
U.K.—FRANCE including Channel Islands		
22	Dover—Dunkerque (train ferry)	B.R. and S.N.C.F.
*23	Gravesend, Southend-on-Sea—Calais	
24	Dover—Calais	G.S.N. Co., Limited
25	Dover—Calais (car ferry)	
26	Dover—Calais (car ferry)	Townsend Bros. Ferries Limited
27	Folkestone—Calais	
28	Dover—Boulogne (car ferry)	B.R. and S.N.C.F.
29	Folkestone—Boulogne	
*30	Newhaven—Dieppe	B.R.
31	Southampton—Havre	
32	Southampton—Guernsey, Jersey	B.R.
33	Weymouth—Guernsey, Jersey	
34	Guernsey, Jersey—St. Malo	I. of S.S. Co., Limited
*35	Southampton—St. Malo	
36	Penzance—Scilly Isles	
U.K.—REPUBLIC OF IRELAND		
37	Fishguard—Cork	City of Cork Steam
38	Liverpool—Cork	Packet Co., Limited
39	Fishguard—Rosslare	B.I.
40	Holyhead—DunLaoghaire	
41	Liverpool—Dublin	B. & I. S.P. Co., Limited
42	Glasgow—Dublin	
		Burns and Laird Line Limited
ISLE OF MAN		
43	Liverpool—Douglas	Isle of Man Steam
*44	Douglas—Dublin	
*45	Douglas—Belfast	B.I.
*46	Douglas—Ardrossan	
*47	Douglas—Heysham	B. & I. S.P. Co., Limited
*48	Douglas—Fleetwood	
NORTHERN IRELAND		
49	Liverpool—Belfast	Belfast S.S. Co., Limited
50	Heysham—Belfast	
*51	Ardrossan—Belfast	B.R.
52	Glasgow—Belfast	
53	Preston—Larne	Burns and Laird Line, Limited
54	Preston—Belfast	
55	Stranraer—Larne	Transport Ferry Services
56	Glasgow—Londonderry	
		B.R.
		Burns and Laird Line, Limited
WESTERN ISLES		
*57	Islay, Inner and Outer Isles—Various services	MacBraynes
58	Mallaig, Kyle of Lochalsh—Stornoway	

\* Summer operation only.

† Limited passenger accommodation.

details of accommodation, cabins, dining saloons, fares and the like can be obtained from travel agencies who will provide the traveller with literature dealing with individual services published by the shipowner concerned.

(To be continued)

The new address of the Scottish Association of Paint Manufacturers is 128 Hope Street, Glasgow, C.2, telephone Central 6434.

A new technique in heating spring steel is helping to speed production of springs for locomotives and heavy transport vehicles by Thomas Turton and Sons, Limited. Symmetrical assembly of individual leaves which make up a complete spring depends on a locating "nib" formed in the centre of each leaf. Before the nibs are formed on a hydraulic press, the leaves are heated by specially adapted oxy-fuel gas nozzles supplied by British Oxygen Gases, Limited. The advantage of the new method, compared with the old air-blown forge technique, is that the treatment is localised to the centre portions of the leaves, so that the area of metal affected by the heat application is considerably reduced and the properties of the surrounding material are not impaired. The new technique of local heating is also being successfully used in rolling the eyes at the ends of the springs.

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# PRESENT STATE OF RAILWAY ELECTRIFICATION

## I—Review of Current Position

By F. J. G. HAUT, B.Sc. (Eng.), A.M.I.Mech.E.

THE Electric Traction Congress in London, together with the continuing discussion in public on the performance of British Railway draw again attention to the importance of railway electrification for the national economy. We can base our observations on the fact that railways (at any rate at present and also in the foreseeable future) have tasks to undertake which no other form of transport can carry out. The railways, and especially British Railways, have however to accustom and acclimatise themselves to a world where there are other forms of transport to be met in severe competition; the position of 40 years ago when railways still had a near monopoly has gone for ever.

If we accept this situation the question arises how to run these railways efficiently and economically. This is largely a political and not a technical question. The Government of the day must try to make up its mind whether British Railways is to be an efficient business concern, earning profits and paying taxes like anybody else. In this case it must be freed from the restrictions of the past. Or alternatively, the Government must decide that it wishes to have a national service, like the Post Office, in which case the question of "profits" or "losses" does not arise. The railways simply have to balance the books and in a given year either pay money to the Exchequer or get some from it. This may be an "engineer's view" on economics but in reality it is as simple as that. After the Government has thus decided on either of these courses, and, if at all possible, removed railways as a plaything from the political arena, it remains to show how the railways are to be modernised so as to provide the required efficient, cheap and safe service we all expect.

### Legacy from the Past

Unfortunately, here a legacy has been left from the past which makes bleak reading. It is not necessarily anybody's fault because the well-run and well-kept railways companies of 1939 were run down so badly to help win the last war. Although a lot of work has been done since 1945, there will still have to be major station reconstructions to make them more attractive to the passengers and more efficient for the handling of goods; modern signalling and braking systems; attractive rolling stock; goods wagons large and modern enough to handle goods cheaply and efficiently. All this will have to be attended to.

First and foremost, and of interest to our present considerations, we have to decide what kind of motive power system we are to choose. There are three courses available, possibly intermixed with one another:

- (1) Diesel traction;
- (2) Electric traction with conventional 1,500 or 3,000-volt direct current; or
- (3) Electric traction with the novel industrial frequency alternating current system.

### Motive Power Systems

The decision is a most important one, committing the nation for 30 to 40 or more years to the system now chosen. As British Railways itself is a latecomer on the path of modernisation, we have the advantage of looking at the work done so far by other countries, especially in the Commonwealth and Europe. Diesel traction is in-so-far very attractive as it simply replaces the steam locomotive by a diesel locomotive, in addition allowing for multiple-unit traction, without requiring new fixed installations such as power and substations and especially overhead supply lines. But for dense services it is far more costly than electric traction and it also relies on the use of imported fuels. Today, it is accepted as the ideal means of keeping otherwise uneconomical branch lines alive, and it is already doing so very nicely in England. Main lines, however, are more economically run by electric traction, especially beyond a certain traffic density—this is considered an accepted fact in the whole of Europe.

After the war of 1914-18, the Central European and Scandinavian countries decided on single-phase a.c. electrification, mostly with 15,000-volt line tension and 16½ cycles frequency, while in the United Kingdom, France and Holland 1,500 volts d.c. was adopted and in Spain, Italy, Belgium and Russia, on the other hand, 3,000 volts d.c. The British Commonwealth followed the United Kingdom with 1,500 volts d.c. As early as 1920, in the Pringle report, 1,500 volts d.c. was recommended and this was confirmed later in the Weir Report.

### Using Industrial Current

In the early 1920s the Hungarians developed the idea of using single-phase alternating current of 50-cycle frequency. A test line was built in Hungary and a later one in Germany, and by 1960, these experimental lines had been operating for between 30 and 35 years, and could be termed a complete success. The Hungarian system operates at 16,000 volts and the German one at 20,000 volts. The Hungarian experiment resulted in the well-known electrification scheme from Budapest to the Austrian frontier for which Metropolitan-Vickers supplied part of the installation. The electrification is still in full use.

The German development comprised the Höllenthal Railway in the Black Forest with four test locomotives (later a fifth was added) and the experiment, which was wholly successful, was brought to an end recently. At the end of the 1939-45 war the Höllenthal Railway came into the French zone of occupation of Germany and French experts became closely acquainted with its working. They were so impressed by its success that the S.N.C.F. decided to electrify a section (Aix-les-Bains to La Roche-sur-Foron) on the single-phase 50-cycle system with 20,000-volt line tension, which has since been changed to 25,000 volts. Although the high-frequency single-phase locomotives are more costly than the d.c. types, the fixed equipment such as substations and overhead structure is very much cheaper.

The short line was such a success that the French decided to electrify the route from Thionville to Valenciennes, via Hirson and Mezieres, a distance of 303 km. (188 miles). This is one of the most important railway links in Europe. The French authorities decided after very exhaustive tests and the development of some very remarkable locomotives to electrify the Paris-Lille-Basel main lines. Other consequences were very beneficial to

French industry as many orders for 50-cycle a.c. locomotives were received, for example, recently one for 100 Co-Co locomotives for Russia. One of the results of French experiments was the decision by British Railways to follow the French example, abandon 1,500-volt d.c. traction and concentrate on 50-cycle a.c. electrification with overhead power supply. The Southern Region third rail system is to be left untouched, however, in fact, it is being extended and its voltage increased to 750 d.c.

### World Position

Thus the position—not including suburban or local lines, which have very varying current systems—to date is as follows, dealing with the major industrial countries:

#### GREAT BRITAIN—U.K.

- (1) 750-volt d.c. third-rail systems to stay where existing, with extensions in Southern Region.
- (2) Future electrifications to be of the 25,000-volt single-phase 50-cycle a.c. type, existing overhead 1,500-volt lines (e.g. Manchester-Sheffield and East London electrifications) to be converted to (2) in due course.

#### THE BRITISH COMMONWEALTH

Substantial electrification schemes exist in:

Union of South Africa	3,000 volts d.c.
Australia	1,500 volts d.c.
New Zealand	1,500 volts d.c.
India	1,500 volts d.c.

India has bought some experimental 50-cycle locomotives from France and has a plan for high-tension routes.

#### CONTINENT OF EUROPE

Switzerland (Federal Railways)	All 15,000 to 16,000 volts single-phase a.c.
Germany	16½ cycles (necessitating special railway current)
Sweden	
Norway	
Austria	

(No interest shown in 50-cycle traction; German experiment abandoned.)

Holland	1,500 volts d.c.
Denmark	
Italy	3,000 volts d.c.
Spain	
Belgium	

(Italy has some very old three-phase a.c. lines which are being converted to standard d.c.)

Russia	3,000 volts d.c.
Poland	
Czechoslovakia	

(Experimental lines being built and single-phase locomotives already in use. It is intended to electrify the Trans-Siberian Railway partly with d.c. and partly with a.c.)

France, of course, as mentioned before, is to keep its 1,500 volt d.c. system and even extend it, but all future electrifications are to be 25,000 volts single-phase 50 cycles a.c.

Hungary, 50-cycle traction, 16,000 volts single-phase a.c.

#### JAPAN

1,500 volts d.c.; decision made to keep certain lines at 1,500 volts d.c. and even extend system, but future electrifications, especially of the 3 ft. 6 in. system, based on test line and locomotives, to be 50-cycle a.c., thus following France's example.

#### AMERICA

U.S.A. Pennsylvania Railroad	12,000 volts single-phase a.c. 25 cycles.
Chicago, Milwaukee and St. Paul Railroad	3,000 volts d.c.
New York, New Haven and Hartford Railroad	11,000 volts single-phase a.c. 25 cycles.
Virginian, Norfolk and Western Railroad	11,000 volts single-phase a.c. 25 cycles.

It is thus to be seen that the three established systems, namely 1,500 volts d.c.; 3,000 volts d.c.; and 15,000 volts single-phase a.c. hold their positions very strongly, but several countries have now decided in favour of 50-cycle electrification, especially Great Britain, France, Japan and India, in addition to Hungary. I have purposely not elaborated on the situation in the Americas as the U.S.A. and Canada have decided on diesel traction and the South American States are not industrial countries, and their electrifications, if any, relatively unimportant, will follow at any rate the example of the industrial countries.

### British Programme

We have heard that two well-appointed committees (Pringle and Weir) and later British Railways' own electrification committee decided in the light of the then available information on 1,500 volts d.c. traction with overhead supply. British Railways were reproached after the war that its electrification scheme was designed prior to 1939 and that it was outmoded and expensive. The French enthusiasm fell thus on fertile ground in Great Britain, and, although it is no doubt the right one in the long run, the almost complete lack of experience of British Railways with high-tension electrification schemes and its countless problems may be a source of delay. Technical experience has to be acquired the hard way—"know-how" cannot really be bought—and the retraining of the personnel of a system, geared for 130 years to steam traction, is bound to take a long time. Thus we must await the first results of the 50-cycle electrification of British Railways with great interest and also patience. When finally British Railways emerges with its main lines well run and modernised and paying their way, the decision will have justified itself. Until then, we must not get impatient for results.

(To be continued)

## B.E.A. REPORT FOR 1959-60

(Continued from page 5)

B.E.A.'s investment programme has been based on the assumption that there will be no check to the opportunity for full expansion to meet public demand. Looking even further into the future, B.E.A. is giving thought to the question of supersonic air transport operations. On the information currently available to us we cannot at present see a requirement for a supersonic aircraft for the short-haul operations with which we are concerned. The operating problems, particularly air traffic control, cost level and relatively small time-saving advantages on short routes associated with this type of aircraft lead us to the conclusion that there is no logical place for it in intra-European operations in the foreseeable future.

"We are aware, however, that the introduction of supersonic aircraft by other airlines, even if they were long-haul airlines traversing Europe, might create such competitive pressure as to force B.E.A. into supersonic operations. We think that this would be an unfortunate development, and would much prefer to see a situation in which subsonic jet aircraft could have an economic life of at least 15 years. This would enable the annual provision for aircraft depreciation to be reduced, and this cost reduction would help materially in the progress towards lower fares on which expansion of European air traffic will continue to depend."

# MORE LOCOMOTIVES

## FOR BRITISH INDUSTRY

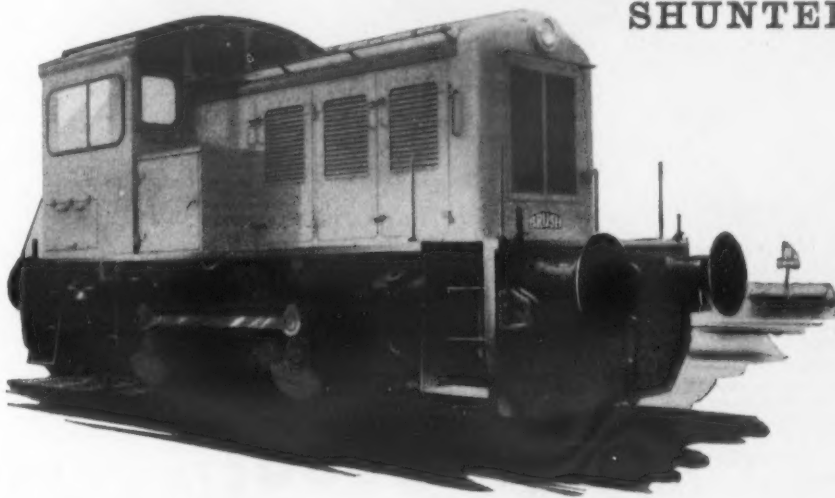
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## SHUNTERS



## TRACTION DIVISION

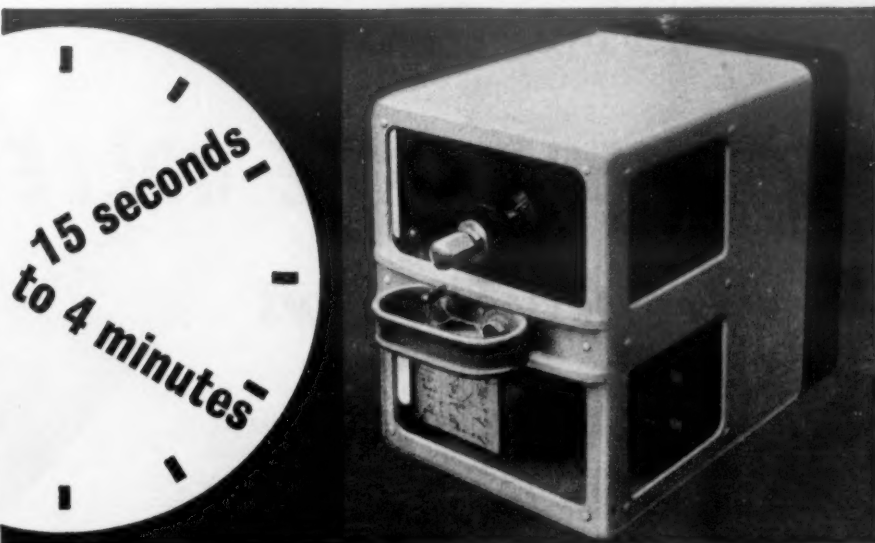
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### EXTERNALLY ADJUSTABLE



## SPECIFICATION

- Range 15 secs. to 4 mins.
- Externally adjustable.
- Accuracy 5%.
- Virtually unaffected by voltage fluctuation
- Automatically Resetting
- Contacts: 6F Silver to Carbon.
- 4B Silver to Silver
- Fully proved.

THE SIEMENS AND GENERAL ELECTRIC RAILWAY SIGNAL COMPANY LIMITED, EAST LANE, WEMBLEY



take up the  
drive with  
**FERODO**



### Ferodo Sintered Metal Friction Materials

take up the drive on modern Diesel locomotives and railcars, because they—

- withstand friction, pressure and distortion better
- absorb energy and dissipate heat faster
- strongly resist 'attacking agents'—heat, cold, dampness, contamination from oil and other liquids, foreign matter
- give consistent performance, consistent smoothness

### Ferodo V-Belts

provide completely reliable non-slip drive for the power unit's auxiliary services.

### Ferodo Asbestos-Based

materials complete a range of friction products used in Diesel locomotives and railcars throughout the world.

**FERODO** First-to last



Ferodo Limited  
Chapel-en-le-Frith

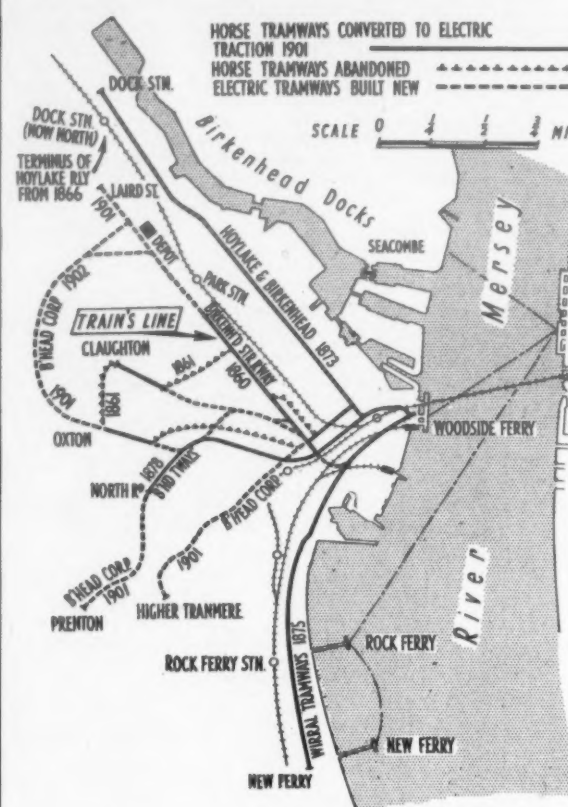
A MEMBER OF THE  
TURNER & NEWALL  
ORGANISATION 9/30

## Centenary of the Tramcar

(Continued from page 3)

During the 36 years of municipally owned and operated electric tramways the undertaking contributed a sum of £85,240 towards the relief of the rates; the growth of this system up to 1927 is shown in the table, following which year tram

Electric Railways of London; A. R. Fearnley, general manager, Birkenhead Corporation Tramways, 1901 to 1904 and then until 1936 general manager at Sheffield, who also held office as president of the Municipal Passenger Transport Association; and R. Stuart Pilcher, rolling stock engineer, Birkenhead Corporation Tramways 1901 to 1904; he later held the managementships of the Aberdeen, Edinburgh and Manchester Transport undertakings respectively, and finally was chairman of the licensing authority for the West Midland Traffic Area. The present general manager, Mr. George A. Cherry, has also served as president of the Municipal Passenger Transport Association.



Horse and electric tramways in Birkenhead

traffic continued to fall as services were terminated.

Year	Passengers	Miles run	Receipts	Working expenses
1902	6,456,361	718,726	£ 31,584	£ 19,811
1907	11,996,031	1,324,748	55,408	33,711
1912	13,279,858	1,225,544	63,651	39,814
1917	17,950,433	1,186,186	80,748	42,106
1922	17,966,065	1,150,558	137,845	103,845
1927	19,092,982	1,223,980	111,577	82,359

Of the men with Birkenhead connections who became outstanding figures in public transport were Sir J. Clifton Robinson, who started as Train's office boy, being mesmerised by the American's advocacy of street railways and who became managing director of the London United Tramways and later a director of the Underground

been made or presented to Parliament, this was the worst, and that feeling it is his duty to protect the interests of the Metropolitan public he would be bound to give this measure his most determined opposition.

The measure failed despite the fair reception given it on February 26, 1858, by *The Times*:

"The proposition of the promoters of the street tramway is, to lay a line from Notting Hill Gate to the Bank via Bayswater and the New Road, and thus to relieve Cheapside, Holborn, Fleet Street, etc., of the 1,592 omnibus loads of passengers to that district by which these thoroughfares are daily impeded. The tramway would consist simply of a small grooved rail let into the road, and would not create the slightest interference with the ordinary traffic, the system being similar to that which has for years been used successfully in the principal American cities. It is asserted that it would enable three times the number of passengers to be

(Continued on page 13)



**THE SOLOMATIC**  
For one-man bus operation

Pre-printed coloured tickets from driver to passenger in a second—automatic overprint of stage, date, etc.



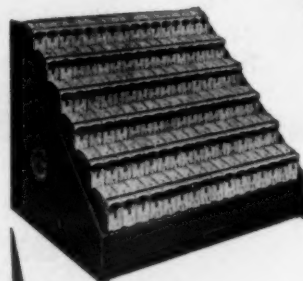
**THE ULTIMATIC**  
For railways

Speedy issue of pre-printed coloured tickets with automatic dating.

## SPEEDIEST FARE COLLECTION with BELL PUNCH

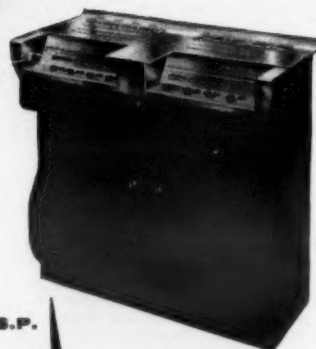
### FARE COLLECTION SYSTEMS

Speed, ease, accuracy—these are the qualities everywhere associated with BELL PUNCH machines, four of which are shown here.



**THE BELLMATIC**

For railways  
Handy container units for clean, compact ticket storage.



**THE S.P.**

For railways  
Self printing for speed and accuracy, issuing 2 tickets per second.



A MEMBER OF THE LAMSON INDUSTRIES GROUP



## FRONT-DRIVE DENNIS

*Pax IV and Loline III also to be Exhibited*

**A**MONG the vehicles to be shown by Dennis Bros., Limited, at Earls Court next month are a new front-wheel-drive independently sprung chassis designed for a gross weight of 3 tons 8 cwt., a Mark IV version of the forward-control Pax chassis for 10 tons 4 cwt. gross offering a choice of diesel engines and a Loline (Bristol Lodekka licence) double-decker in Mark III form, embodying a flat floor, single-step forward entrance and air suspension at the rear. Also on the stand will be a current Mark II Loline chassis bodied by East Lancashire Coachbuilders, a Heron diesel-engined chassis with special gown van body and a Pax platform lorry powered by the B.M.C. 5.1-litre diesel engine.

The new front-wheel-drive vehicle, named

all points that do require periodic attention. The vehicle is mounted on 7.50-16 8-ply rating tyres and steering is by recirculatory-ball gear. Braking employs 12 in. by 2½ in. two-leading-shoe front and leading-trailing-shoe rear units, hydraulically operated and providing a total lining area of 207 sq. in. The Vendor has a wheelbase of 9 ft. 4 in. and a wheeltrack turning circle of 40 ft. and will accommodate a body 16 ft. 11 in. long and 6 ft. 6 in. wide overall. The diesel-engined chassis weighs 1 ton 8½ cwt.

### Mark IV Pax

The Mark IV Pax is a versatile forward-control chassis in the medium-weight range offered with alternative diesel engines and gearboxes and a wide



View showing the low flat frame of the new Dennis Vendor, with rubber independent rear suspension, independent front suspension and front-wheel drive; right, the Pax IV which can be powered by either the A.E.C. AV312 or the B.M.C. OEB1 diesel engines

Vendor, has been developed to provide an exceptionally low floor level, with good ride characteristics and stability and low maintenance demands. It employs a wide flat chassis frame welded up from Cor-Ten corrosion-resistant steel channel, which with elimination of the normal transmission shafts gives greater freedom of body design. The normal-control layout facilitates access to the driving seat from either side and between the cab and body when this is desired.

### Mechanical Details

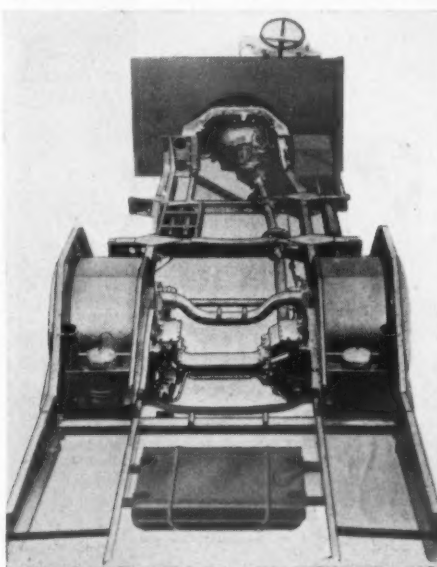
The Vendor is powered by either a 2.6-litre diesel engine producing 57 b.h.p. at 3,500 r.p.m. and 101.7 lb./ft. torque at 1,800 r.p.m. or a 2.19-litre petrol engine developing 56 b.h.p. at 4,000



Under-bonnet view of the Standard petrol engine in the Vendor

r.p.m. and 107.5 lb./ft. torque at 1,600 r.p.m. Both are four-cylinder units produced by Standard Motor Co., Limited, and the diesel engine employs the C.A.V. DPA distributor fuel-injection pump. Drive is through a Borg and Beck 9-in. single dry-plate clutch and three-speed synchromesh gearbox with indirect top gear of 1.182 to 1. Other ratios are 2.082 to 1 second and 4.071 to 1 first. In unit with the gearbox is a differential-final drive gear having a standard ratio of 5.625 to 1, from which drive to the front hubs is through shafts embodying constant-velocity universal joints.

All-round independent suspension is arranged through a transverse leaf spring, 54 in. by 3 in., and wishbones at the front and trailing arms and rubber in compression at the rear; arm-type double-piston dampers are fitted all round. The extremely simple rear suspension, which uses Metalastik bonded-rubber components, comprises on each side a trailing arm attached to the chassis through a rubber bush at the front end and carrying the hub at the other, with a rubber buffer interposed between chassis frame and trailing arm. The rubber blocks are bolted to the chassis frame for easy renewal when necessary. The rear suspension requires no lubrication and throughout the design thought has been given to accessibility of



Mark III Loline chassis for single-step forward or rear entrance, showing rear air-suspension units

which is matched with the Dennis T4 constant-mesh four-speed box and Moss spiral bevel rear axle.

The chassis frame has flitched sidemembers and is assembled by fitted bolts and improved vacuum-hydraulic braking compared with earlier-mark Pax chassis employs a total lining area of 433 sq. in. Various wheel and tyre sizes are offered to meet a wide variety of operating requirements and as well as tipper and tractor versions, the Pax IV will shortly be offered in low-loading form.

### Loline III

The Mark III version of the Loline double-decker is offered with wheelbase of 16 ft. 11 in. or 19 ft. 2 in. for forward- or rear-entrance low-height bodywork with central gangways and conventional seating layout. Either the Gardner 6LW or 6LX diesel engine can be fitted in conjunction with a new Dennis five-speed constant-mesh or Wilson four-speed semi-automatic gearbox.

## Centenary of the Tramcar

(Continued from page 12)

carried by the existing number of horses, thus affording an opportunity for a commodious construction of vehicles simultaneously with a vast reduction in fares, that it would reduce parochial rates by preventing wear and tear of the roads, and that, in a great measure, it will remove noise."

After the rejection *The Engineer* commented:

"To those passing through London from one railway station to another, the importance of a ready means of traversing the streets is as great as to those living in them. How frequently does it happen that all one's calculations made with the most scrupulous care, and perhaps after some hours' battling with *Bradshaw*, are upset by the accidental crowding of the streets of London which may unexpectedly detain for an almost indefinite time, an express passenger who has crossed the greater part of the country at the rate of 40 to 60 miles an hour?"

"It appears to us that the proposition to lay tramways was just one of those reasonable measures capable of being realised by comparatively a very small outlay."

"The scheme has, as many of our readers will already have learned, been opposed by Sir B. Hall in his place in Parliament, and a motion has been agreed to postpone the reading of the Tramway Bill for six months, which is a civil way of throwing it out altogether. Where was our new Chief Commissioner of Works, that he did not use his influence in supporting a measure which was very popular, and which would, if common care and principles of straightforward dealing had been exercised on the part of the Government and the Company, have resulted in one of the most reasonable undertakings ever brought before the public?"

Train, having studied the situation, resolved to do without the aid of Parliamentary powers and to content himself with sanctions from the local authorities, as he started off at Birkenhead. His London lines were negotiated with the Commissioners of Metropolis Turnpike Roads North of the

Thames, the Westminster District Board of Works and the Lambeth Vestry. Each had a separate operating company—the Marble Arch Street Rail Co., Limited, the Westminster Street Rail Co., Limited, and the Surrey Side Street Rail Co., Limited. From Marble Arch to Porchester Terrace was opened March 25, 1861, along Victoria Street on April 15 and from Westminster Bridge to Kennington Gate on August 15.

Public dissatisfaction caused the Commissioners of Metropolis Turnpike Roads to rescind its permission, as did the Westminster District Board of Works; Train and the Lambeth Vestry were indicted for nuisance. So the lines were closed in September, 1861, on March 6, 1862, and June 21, 1862, respectively and the highways restored. In the meantime Train had attempted to obtain a Parliamentary cachet for the tramway, but his Street Rail Company Bill was thrown out.

The first street tramway to secure Parliamentary sanction was the Landport and Southsea, primarily for passengers between the trains at Portsmouth and the Ryde boats from Southsea, the Act for which was passed on June 8, 1863. Then the first Liverpool tramways were authorised in 1868 and three London companies in 1869. The Government regulated what appeared to be a "movement" by the Tramways Act, 1870; the first line to be authorised after its passage was the Plymouth, Stonehouse and Devonport.

For low cost deliveries  
discriminating operators choose

# KARRIER 'BANTAM'

PETROL OR DIESEL 2-3 TONNERS



### SALIENT FEATURES

FULLY PROVED in service, easy to handle, and offering a high degree of driver comfort, this quality-built truck, adaptable as either van, lorry or tipper and available with alternative wheelbases, will give thousands of miles of trouble-free running. Furthermore, Rootes specialised service facilities are available throughout the country whenever needed.

- ★ Light diesel engine developing 54 b.h.p.; or 4 cyl. o.h.v. petrol engine developing 53.5 b.h.p., with long life chrome bores.
- ★ Full forward control with over 11' body-space on 8' 2" w.b. chassis; over 14' on 10' 2" w.b. chassis.
- ★ Gross vehicle weight 99 cwt.
- ★ Exceptional manoeuvrability.
- ★ Low platform easier and quicker to load.
- ★ Powerful hydraulic brakes.
- ★ Comfortable all-steel cab of imposing appearance.

A ROOTES PRODUCT — BUILT STRONGER TO LAST LONGER!

KARRIER MOTORS LTD, LUTON

EXPORT DIVISION: ROOTES LTD, DEVONSHIRE HOUSE PICCADILLY LONDON W.1

# CAN YOU AFFORD NOT TO TRY Shell Rotella Multigrade?



Shell Rotella Multigrade Oils

LEADERSHIP IN LUBRICATION



## IMPORTANT CONTRACTS

## New Zealand Copper Industry

**PLANS** for establishing a copper manufacturing industry in New Zealand are being made under a joint arrangement between Imperial Chemical Industries of Australia and New Zealand and Yorkshire Imperial Metals, of Leeds. A company to undertake manufacture of copper and copper alloy sheet, strip and tube is likely to be formed in New Zealand as a subsidiary of I.C.I.A.N.Z., with a plant probably in the Auckland area. This will be a new industry for New Zealand; it will be capable of producing practically all the country's requirements in this field, saving about £500,000 annually in foreign exchange.

## Costain Nyassaland Contract

Richard Costain (Africa) has been awarded a £410,000 contract in connection with the Walker's Ferry Scheme, Nyassaland. The contract, which is being carried out for the Mudi River Water Board, entails the laying of 30 miles of high-pressure water main varying from 24 in. to 12 in. diameter, including several river, road and railway crossings, in an area short of water between the Shire River and Blantyre-Limbe.

## Volta River Tenders

Tenders are expected shortly to be invited by the Ghana Government for civil engineering works on the Volta River Dam, including the dam itself and the powerhouse.

## Engine Test Plant For Export

Heenan and Froude, Limited, Worcester, is to supply Hindustan Aircraft, Limited, Bangalore, with a complete engine test plant for the post-overhaul testing of Rolls-Royce Dart turboprop engines. The plant, which includes a Froude dynamometer of 6,000 b.h.p. with all auxiliary equipment and accessories, was ordered through the India Store Department in London. Other recent export orders received by Heenan and

Froude include one from Turbomeca, France, for four Froude dynamometers of 1,300 b.h.p. and one from Svenska Aeroplan, Sweden, for a complete engine test plant incorporating a Froude dynamometer of 600 b.h.p. for testing gas turbines made under Turbomeca licence.

## Scottish Region Contracts

The following contracts have been placed by the Scottish Region of British Railways:  
James White (Contractors), Limited, Edinburgh, for extension of examination pits, Leith Central diesel depot.  
James Crawford and Co., Limited, Glasgow, for modernisation of Hanover Street and Dundas Court entrances, Queen Street Station, Glasgow.  
James Young (Contractors), Limited, Glasgow, for raising superstructure of two bridges between Burnside and Kirkhill.

## North Eastern Region Contracts

Recent contracts placed by the North Eastern Region of British Railways include:  
Intermit, Limited, Birmingham, for heavy-duty filter washing and oiling equipment for maintenance of main-line diesel locomotives at Holbeck motive power depot, Leeds.  
Hilmor, Limited, Stevenage, for a motorised pipe-bending machine for York carriage works.  
S. Maclean and Son, Limited, Newcastle upon Tyne, 6, for alterations to the ventilation installation in the brass foundry at North Road Works, Darlington.  
F. and J. Watkinson, Bradford, 4, for a weighbridge in Church Street goods yard, Halifax.

## East African Rail Link Contract

A contract worth about £228,000 has been awarded by East African Railways and Harbours to Stirling-Astaldi (East Africa), Limited, for work on a 30-mile section of the Mnyusi-Ruvu rail link at the northern end. This is the first contract to be awarded for work on the 123-mile new line, which will link the Tanganyika Central Line and the Tanga Line. A further contract for a ten-mile section at the Ruvu end is expected to be awarded next month so that work can begin in October. The whole rail link, which will cost £2.6 million, is planned to be in operation by mid-1962.

## SHIPPING AND SHIPBUILDING

## Refitting Job For Thornycroft

**THE** contract for modernising and equipping with air-conditioning the P. and O.-Orient Line *Iberia* has been won by John I. Thornycroft and Co., Limited, at Southampton. She will be withdrawn from service in January next. The work has to be done at a fixed price (probably slightly over £500,000) and within 70 days. Besides the installation of air conditioning, 105 new showers and water closets have to be installed. *Iberia* will be the last of the liners due for treatment under the 1958 programme.

## Grant for Ashdod Project

**THE** World Bank has granted a 25-year loan amounting to \$27,500,000 for the building of a harbour at Ashdod, some 18 miles south of Tel Aviv in Israel. The harbour will serve a new industrial centre to be built there.

## Clydeside Graving Dock

**COMPLETION** of protracted negotiations to raise £4½ million for the establishment of a large graving dock on Clydeside is expected soon, according to a report from Glasgow. The new facility, which is scheduled to be built by the Firth of Clyde Dry Dock Company—a consortium of shipbuilding and engineering companies—at Inchgreen, Greenock, will permit repair of the very large vessels using the ocean-going tanker terminal at Fintona as well as installation of machinery in and subsequent repair and overhaul of modern large vessels. The largest graving dock on the Clyde at present can accommodate vessels up to 32,000 tons and 85-ft. breadth only.

## Simpler Form-Filling for Travellers

**THE** Government is to introduce a scheme to collect some limited information from holders of British passports who enter and leave on long sea (and air) routes to and from non-European

countries. The information will be collected on simple cards and will show how many migrants or tourists or business visitors are moving in each direction, which will be helpful for estimates of the balance of payments, and will also give more information about migration to and from this country than is available at present. For travellers by sea this simplified scheme will take the place of long-standing arrangements for requiring information from passengers which have proved burdensome to the shipping companies.

A new edition of BS173—Rotating electrical machines for use on road and rail vehicles—now available (price 10s.). It reflects progress in the industry during the past 19 years and covers the electrical performance of rotating electrical machines forming part of the equipment of all types electrically propelled rail and road vehicles, including those in use in mines except battery-electric vehicles. In preparing the standard, account has been taken of various relevant publications of the International Electrotechnical Commission.

## FINANCIAL RESULTS

**NOTES** on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

## Kennings

The directors of Kennings, Limited, announce that in response to the offer by the company to its ordinary shareholders by way of rights of 1,042,897 ordinary shares of 5s. each at 13s. 6d. per share shareholders have exercised the rights to subscribe to the extent of 970,159 shares, i.e. over 93 per cent.

## H. V. Burlingham

Duple Motor Bodies, Limited, has acquired the whole of the share capital of H. V. Burlingham, Limited, Blackpool. Burlingham is one of the largest private coach building companies in the country and its two factories in Blackpool have approximately 300,000 sq. ft. of floor space. No far-reaching changes in the organisation of Burlingham are contemplated beyond its gradual integration into the Duple group of companies and the improvement in the service and repair facilities for Duple customers in the north of England.

## C.A.V. Acquires Bryce Berger

C.A.V., Limited, has acquired from Hawker Siddeley Industries, Limited, the whole of the share capital of Bryce Berger, Limited, Hucclecote, near Gloucester. An announcement from C.A.V. and Hawker Siddeley stated that the former had large-scale facilities for research and development in the specialist field of diesel fuel injection equipment which would be of benefit to Hawker Siddeley. For its part C.A.V. will gain a valuable complement to its business. Bryce Berger will continue to operate from the factory at Hucclecote.

## Skurray's and Locomotors

Locomotors, Limited, which has many branches throughout the country and is well-known in the retail motor trade, including specialised bodybuilding, has acquired the whole of the share capital of Skurray's, Limited, of Swindon, a firm which has specialised in motor vehicles and their equipment since 1899. No changes are contemplated in the management and staff at Skurray's; Mr. Howard Godfrey, chairman and managing director, with his existing executive directors and staff, will continue to offer the same attention to customers.

## Okanagan Helicopters

Shareholders of Okanagan Helicopters, Limited, have approved the sale of the company to Bristol Aero-Industries, Limited, for \$4,061,589. Bristol Aero-Industries is a wholly-owned subsidiary of Bristol Aeroplane Company of Canada which, in turn, is controlled by Bristol Aeroplane Co., Limited. The deal will become final on approval by the Air Transport Board of Canada and Department of Transport and arrangement of satisfactory financing by underwriters.

## United Dominions Trust

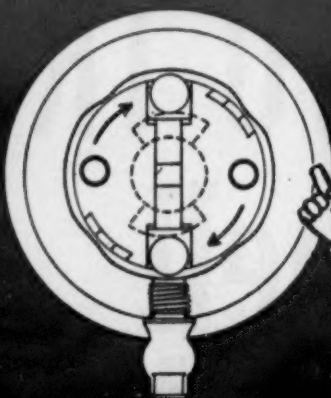
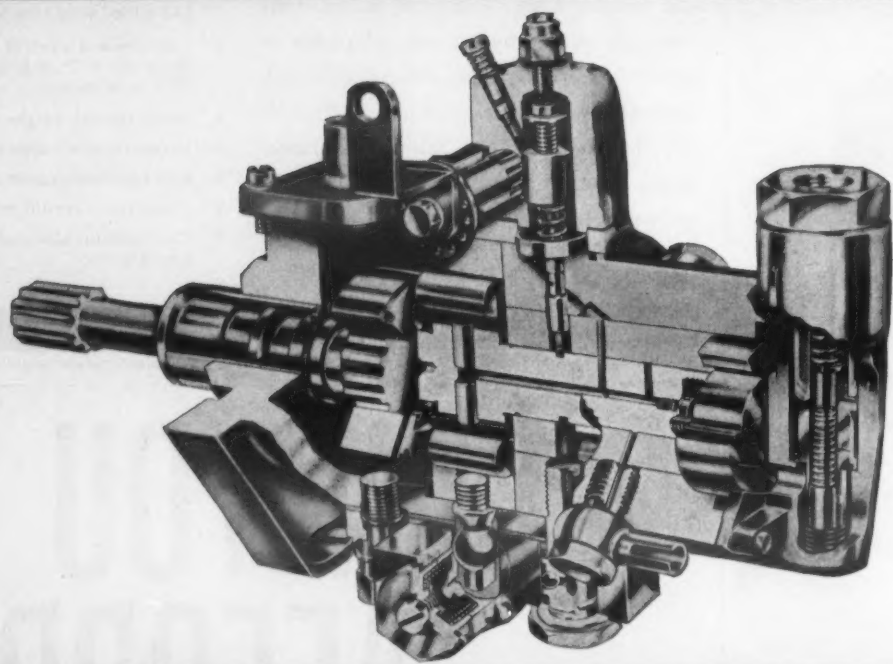
At the annual general meeting of the United Dominions Trust, Limited, the chairman, Mr. J. Gibson Jarvie, recalled that during the financial year covered capital and reserves had risen from £14,865,431 to £21,449,921. To that figure, however, must now be added the £5,000,000 being the final call on the recent share issue. This raised the capital and reserves to £27,449,921 without taking into account profit earned since. Balances at banks and in cash had jumped from £10,511,338 to £14,318,408; the current assets of the group at June 30 stood at £108,091,706. Bank loans and acceptances had risen by approximately £4,000,000 to £32,738,758 and current and deposit accounts, amounting to less than £64 million last year, now exceeded £100 million. The aggregate figures in the balance sheet had climbed from £119 million to £174 million.

## FORTHCOMING EVENTS

Until August 27.—Tramway Centenary Exhibition, Bishopsgate Institute, Bishopsgate, London. Models and documents arranged by the Tramway and Light Railway Society. 10 a.m. to 9 p.m.  
Until September 7.—Central Line Diamond Jubilee Exhibition, Charing Cross Underground Station.  
August 27.—B.L.S. Visit to Kington and Presteign branches by freight train, leaving Leominster 8.20 a.m.  
August 28.—O.S. (North Western and Yorkshire). Visit to Halifax Passenger Transport Department.  
S.C.T.S. Coach tour and visit to London Airport and Oxford.  
September 2.—Rly. C. H. A. Vallance, "North of Inverness," Royal Scottish Corporation, Fetter Lane, E.C.4. 7 p.m.  
September 3.—R.C.T.S. (South of England). Meeting. Members' slides. Junction Hotel, Eastleigh. 6.30 p.m.  
September 5-11.—Society of British Aircraft Constructors. Annual flying display and exhibition. (Public days September 9-11.)  
September 11.—H.C.V.C. Fifth annual old lorry rally. Cranes Close, Basildon. 2.30 p.m.  
September 12-16.—Municipal Passenger Transport Association. Conference at Douglas, I.O.M.  
September 13.—R.C.T.S. (East Midlands). Meeting and B.T.C. film show, Thurand Hall, Nottingham. 7.30 p.m.  
September 18.—S.C.T.S. Bus tour of Southampton and visit to graving dock and locomotive shed.  
September 19.—R.C.T.S. (Merseyside). G. O. B. Clark, "Main-Line Diesel Locomotives," Woodside Hotel, Birkenhead. 7.30 p.m.  
H.M.R.S. T. L. Jones, "Welsh Railways Records," Keen House, Calshot Street, W.1.  
September 22.—R.C.T.S. (West Riding). George Dow, "Railway Heraldry," Railway Institute, York. 7.15 p.m.  
September 23.—R.C.T.S. O. J. Morris, "L.B.S.C.R. Suburban Services," 163 Eversholt Street, N.W.1. 7.15 p.m.  
September 23-October 1. Commercial Motor Show, Earls Court.  
September 24.—O.S. Annual dinner. Clarendon Restaurant, Hammersmith, W.6. 7 for 7.30 p.m.

## KEY TO CODE

A.D.A.—Aluminium Development Association; A.F.—Aviation Forum; B.I.R.E.—British Institution of Radio Engineers; B.L.S.—Branch Line Society; D.E.U.A.—Diesel Engineers and Users Association; E.R.S.—Electric Railway Society; H.C.V.C.—Historic Commercial Vehicle Club; H.M.R.S.—Historical Model Railway Society; Inst.C.E.—Institution of Civil Engineers; I.E.E.—Institution of Electrical Engineers; I.N.A.—Institution of Naval Architects; I.R.S.E.—Institution of Railway Signal Engineers; I.R.T.E.—Institute of Road Transport Engineers; I.T.A.—Industrial Transport Association; I.Loco.E.—Institution of Locomotive Engineers; I.Mar.E.—Institute of Marine Engineers; I.Mech.E.—Institution of Mechanical Engineers; I.Nav.—Institute of Navigation; Inst.H.E.—Institution of Highway Engineers; Inst.P.—Institute of Petroleum; Inst.T.—Institute of Transport; Inst.Traf.A.—Institute of Traffic Administration.  
L.M.R.L.D.S.—London Midland Region Lecture and Debating Society; L.R.T.L.—Light Railway Transport League; N.T.M.R.C.—Norbury Transport and Model Railway Club; O.S.—Omnibus Society; P.R.D.G.—Peterborough Railway Discussion Group; P.V.O.A.—Passenger Vehicle Operators Association; P.W.I.—Permanent Way Institution; R.A.E.S.—Royal Aeronautical Society; R.C.H.S.—Railway and Canal Historical Society; R.C.T.S.—Railway Correspondence and Travel Society; R.H.A.—Road Haulage Association; R.S.A.—Royal Society of Arts; Rly.C.—Railway Club; Rly.E.C.—Railway Enthusiasts Club; Rly.S.A.—Railway Students Association; S.C.T.S.—Southern Counties Touring Society; S.E.—Society of Engineers; S.L.S.—Stephenson Locomotive Society; S.R.L.D.S.—Southern Region Lecture and Debating Society; S. Wales and Mon. R.D.L.D.S.—South Wales and Mon. Railway and Docks Lecture and Debating Society; T.R.T.A.—Traders Road Transport Association; W.R.L.D.S.—Western Region London Lecture and Debating Society; W.W.R.T.S.—West Warwickshire Railway and Travel Society.



Distributor Type Fuel Injection Pump

## ONE PUMPING ELEMENT ONLY

The DPA pump is basically simple in design, and has one pumping element only. This delivers fuel to each cylinder in turn, through the distributor. Accuracy of delivery is 'built-in' by high precision machining. No phasing or calibration is required. There are no highly stressed springs—the opposed plungers are returned by oil pressure. The complete unit operates in filtered fuel oil, and wear is negligible. The DPA is ideally suited for high speed diesels—already over a third of a million are in use throughout the world.



The World's Largest Manufacturers of

## FUEL INJECTION EQUIPMENT

C.A.V. LIMITED, ACTON, LONDON, W.3.



## SOCIAL AND PERSONAL

### The Late Lord Weeks

WE greatly regret to record the death, at the age of 69, of Lieut.-General Lord Weeks, K.C.B., C.B.E., D.S.O., M.C., director and formerly chairman of Vickers, Limited, chairman of the Finance Corporation for Industry and a director, inter alia, of Associated Electrical Industries, Limited, British Petroleum Co., Limited, Massey-Ferguson Holdings, Limited, and the Hudson's Bay Company. Educated at Charterhouse and Gonville and Caius College, Cambridge, he joined Pilkington Brothers, Limited, in 1912. After distinguished service in the 1914-18 war he returned to Pilkingtons in 1919 and in 1926 joined the board of that company. He became chairman of the executive board of Pilkington Brothers in 1939, but was soon recalled to the army on the outbreak of war. His rise was rapid. He was Chief of Staff, Territorial Division in 1939; brigadier on the General Staff, Home Forces, in 1940; and a major-general in 1941, serving as Director General of Army Equipment. From 1942-45 he was lieutenant-general, serving as Deputy Chief of the Imperial General Staff. He left the army in 1945, joining in that year the boards of Vickers, Remploy, and the Finance Corporation for Industry. In 1946, he became deputy chairman of Vickers, becoming chairman in 1948. He retired from the Vickers chairmanship in 1956, but remained a director of the company. He was awarded the C.B.E. in 1939, the K.C.B. in 1943, and created first Baron Weeks of Ryton in 1956.

Mr. T. R. V. Bolland has been appointed line traffic manager, South Eastern Division, Southern Region, B.R. He joined the Southern Railway as a cadet in 1946. After three years' training in all departments, he gained experience in the three London traffic districts between 1949 and 1952.



Mr. T. R. V. Bolland

In that year he was appointed assistant to the district traffic superintendent, Redhill, becoming assistant district traffic superintendent, Woking, in 1954. He was appointed assistant to the chief operating superintendent in 1957, and traffic superintendent in the South Eastern line traffic organisation in 1958.

Air Vice-Marshal T. U. C. Shirley has been appointed deputy controller of electronics, Ministry of Aviation.

It is with regret that we record the death, at the age of 83, of a former chief chemist of the L.M.S.R., Dr. P. Lewis-Dale, B.Sc., F.R.I.C.

Mr. C. H. Clarke, assistant treasurer, has been appointed treasurer, Southern Region, B.R. He succeeds Mr. W. S. M. Stapleton, retiring.

Mr. R. C. Moore, general manager, Sheffield Transport Department, is to retire next year, it has been disclosed by Alderman S. Dyson, chairman of the transport committee.

Mr. W. U. Chapman, manager of the Goodyear industrial products department, has been transferred to the export sales division of the company. He is succeeded by Mr. J. T. Pearson.

Mr. G. K. Newman, M.A. (Oxon), took up the position of chief executive officer of the Road Haulage Association on August 24. He succeeds Mr. R. Morton Mitchell, who died in February.

Mr. Newman is a barrister and has been engaged in commerce and industry since retiring from practice at the Bar six years ago. After taking his degree in law at Pembroke College, Oxford, in 1939, he served in the Army in staff and regimental appointments until 1946 when he was demobilised with the rank of major. Called to the Bar in 1947, he practised with considerable success until 1954 when he accepted a position as legal adviser to a group of commercial companies, and since 1956 he has been engaged in advisory and administrative work in the International Electrical Association. Apart from his legal experience, Mr. Newman has lectured and broadcast.

Mr. H. C. Steeples, assistant engineer (new works), North Eastern Region, has been appointed assistant civil engineer (modernisation) in the same region.

The Minister of Transport has appointed Mr. J. R. Madge to be his principal private secretary with effect from September 5, in succession to Mr. J. Gielick, who is being promoted.

Mr. C. Butterfield, formerly chairman of W. P. Butterfield, Limited, has been appointed life president of the company. Mr. A. J. Butterfield moves up from deputy chairman to chairman.

Consequent upon the resignation of Mr. W. A. Walsley, Mr. D. Boucher, at present the London traffic manager, has been appointed commercial manager of Silver Roadways, Limited, as from August 22.

### A.E.I. Directors

AS a result of his appointment as the first High Commissioner in the Federation of Nigeria, Viscount Head of Throope, P.C., C.B.E., M.C., has resigned from the board of Associated Electrical Industries, Limited. He became a director at the end of December, 1957. Sir Joseph Latham, C.B.E., formerly deputy chairman of the National Coal Board, has been elected a director and Mr. C. R. Wheeler, C.B.E., has been appointed an additional vice-chairman of A.E.I.; he will take up executive duties in 1962.

The Tilling Group has announced that Mr. R. G. Howe, who is at present director and general manager of Southern Vectis Omnibus Co., Limited, has been appointed director and general manager of Lincolnshire Road Car Co., Limited, and will take up his new duties in the near future.

In our last issue, the late Mr. C. W. G. Elliff was inadvertently described as chairman of the South Eastern Area Transport Users Consultative Committee whereas he was, of course, secretary. Mr. Elliff retired from railway service in February this year.

Mr. H. H. Edwards has been appointed to the post of assistant chief of police, North Eastern Region, B.R. He joined the Great Western Railway police at Paddington in 1940 and since 1957 has been superintendent in charge of the Manchester division of the B.T.C. Police.

Mr. W. L. MacLennan, deputy manager and chief engineer, Glasgow Corporation Transport Department, will retire on November 15. Mr. D. Shaw, production and stores controller, has been appointed to the post of chief engineer at a salary of £1,955-£2,205 per annum. The transport committee also agreed to appoint a deputy manager without the formal departmental responsibility which has applied previously and to advertise this post at a salary of £2,270-£2,654 per annum.



Presentations were exchanged when directors of Guy Motors, Limited, and of T.G.B. Motors, Limited, Clitheroe, prominent Guy distributor, met in Wolverhampton. Here, Mr. J. Harper, governing director, T.G.B. Motors, presents Mr. A. Chamberlain, chairman of Guy Motors, with a silver cup for competition within the Guymo Welfare Club

Mr. R. W. Stuart Mitchell, M.Sc., A.R.C.S.T., A.M.I.C.E., M.I.Mech.E., has relinquished his appointment as group chief engineer to Associated British Engineering, Limited, in order to accept the new chair of gas turbine technology at the Technological University of Delft, in Holland. He will retain his connection with Associated British Engineering as technical adviser to the group for a period of two years in the first instance.

Mr. A. F. Simpson, M.I.Mech.E., M.I.Loco.E., M.I.(Rhod.)E., hitherto diesel officer, Rhodesia Railways, has been appointed assistant chief mechanical engineer. He was apprenticed in 1924 at the Inverurie workshops of the London and North Eastern Railway. In 1935, Mr. Simpson became an assistant locomotive superintendent on the Burma Railways. After postwar employment with private companies in South Africa, he returned to Burma to assist with the rehabilitation of the railway system. In 1950 Mr. Simpson joined the Rhodesia Railways and has latterly been diesel officer.

As already recorded, Mr. J. K. Blue, previously passenger assistant, Waterloo, has been appointed freight commercial officer, line traffic manager's office, South Eastern Division, Southern Region.

Mr. Blue entered the service of the London, Brighton and South Coast Railway at Brighton in 1918, and after periods at various stations and depots was transferred to the Southern Railway commercial headquarters in 1934. From 1942 to 1945 he served with the Royal Air Force, and after returning to the railway was appointed successively head of commercial superintendent's excursion section in 1950, deputy chief of passenger section, 1951, chief commercial clerk, Redhill district, 1953, chief clerk, Redhill district, 1955, traffic development officer, Orpington district, 1956, passenger assistant to line traffic manager, South Eastern Division, 1958, and passenger assistant to commercial officer, Waterloo, in 1959.

Sir Duncan Cumming, a director of B.O.A.C. Associated Companies, Limited, is to become part-time adviser on African affairs to B.O.A.C.

At the annual luncheon given by the general manager of the London Midland Region to those railwaymen who have attained the highest civic honour, Mr. David Blee pointed out that he had been privileged to entertain a greater total number of lord mayors and mayors than had any previous L.M.R. general manager. They included three engine drivers, two guards, a blacksmith, a line-man, a signaller, a coppersmith, a shedman and a clerk. They comprised the lord mayors of Nottingham and Stoke-on-Trent and the mayors of Burnley, Burton-on-Trent, Carlisle, Chester, Crewe, Dukinfield, Kettering, Wigan and Workington.

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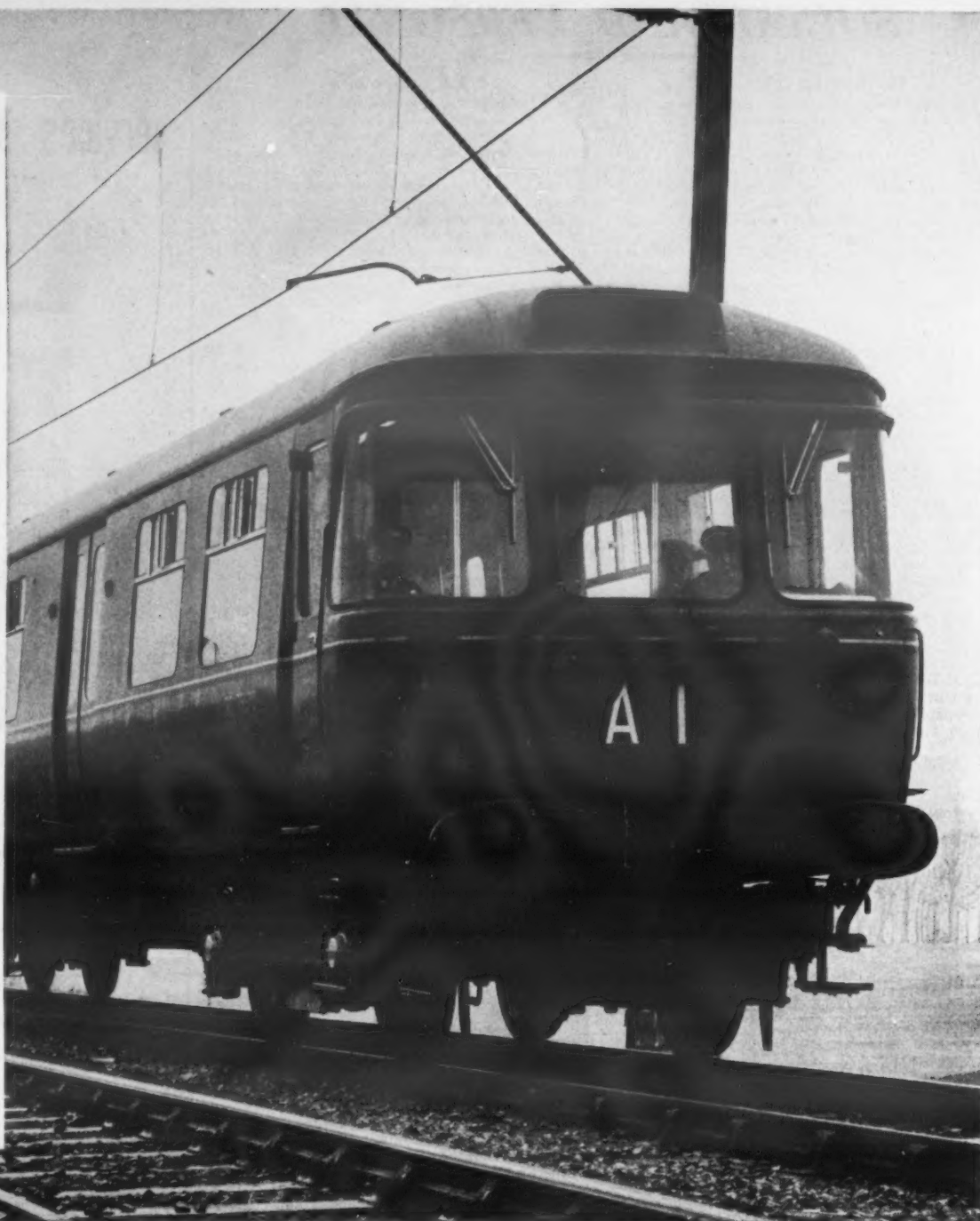
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Printed by Odhams (Watford) Limited, St. Albans Road, Watford, Herts, for and published by Modern Transport Publishing Co., Limited, Russell Court, 3-16 Woburn Place, London, W.C.1.